

3. The outlay abstracted above is shown in the following statement divided under the different projects:—

WORKS.	During 1898-99.			To end of 1898-99.		
	Direct charges.	Indirect charges.	Total.	Direct charges.	Indirect charges.	Total.
1	2	3	4	5	6	7
<i>Major Irrigation Works—</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Orissa Canals ...	67,748	2,322	70,070	2,57,88,378	5,84,773	2,63,73,151
Midnapore Canal ...	...	...	...	82,80,766	1,84,661	84,65,427
Hijili Tidal Canal ...	...	...	...	25,51,729	63,513	26,15,242
Sone Canals ...	(—)31,444	393	(—)31,051	2,59,43,002	9,17,496	2,67,60,498
Total ...	86,304	2,715	89,019	6,24,63,875	17,50,443	6,42,14,318
<i>Minor Works and Navigation—</i>						
Tirhut project ...	...	...	...	5,31,425	74,650	6,06,075
Damodar project ...	(—)1,200	...	(—)1,200	1,39,141	16,239	1,55,380
Calcutta and Eastern Canals	64,993	1,293	66,286	63,69,011	92,241	64,61,252
Orissa Coast Canal ...	14,838	98	14,936	44,25,796	1,06,616	45,32,412
Saran Canals ...	15,001	13	15,014	6,94,393	27,196	7,21,588
Total ...	93,632	1,404	95,036	1,21,59,765	3,16,942	1,24,76,707
GRAND TOTAL ...	1,29,936	4,119	1,34,055	7,46,23,640	20,67,385	7,66,91,025

REVENUE.

4. The statement below shows the totals for the last five years of the receipts, working expenses, and interest charges for Major Irrigation Works:—

PARTICULARS.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
Receipts from all sources (less refunds of revenue) ...	15,20,127	15,07,729	19,02,205	21,72,182	18,39,942
Working expenses (direct and indirect charges) ...	14,62,049	13,84,340	13,66,707	14,37,681	14,37,467
Net revenue ...	58,078	1,23,389	5,35,498	7,34,501	4,12,475
Charges for interest ...	24,81,895	24,94,499	24,98,009	24,97,817	24,97,828
Deficit ...	24,23,817	23,71,110	19,62,511	17,63,316	20,85,353
Rate per cent. on Capital outlay ...	3.79	3.69	3.05	2.74	3.25

5. The financial results of Major Irrigation Works to the end of the year 1898-99 were as follows:—

FINANCIAL RESULTS.

				Major Irrigation Works.
				Rs.
Direct revenue ...	...	...	...	3,21,18,203
Working expenses (direct charges)	...	...	...	2,92,95,827
Results on direct charges only	...	Profit		28,22,376
Indirect charges debitable to revenue	...	...		17,55,835
Results on both direct and indirect charges		Profit		10,66,541
Charges for interest on Capital	...	...		5,86,06,726
Net results, including interest to end of 1898-99	Loss			5,75,40,185

6. The financial results to the close of the year 1898-99 of Minor Works and Navigation are shown below:—

				Works for which capital and revenue accounts are kept.	Works for which only revenue accounts are kept.
				Rs.	Rs.
Direct revenue ...	...	...	...	2,60,38,981	92,91,127
Working expenses (direct charges)	...	...	...	1,15,62,792	54,33,788
Results on direct charges only	Profit			1,44,76,189	38,57,339
Indirect charges debitable to revenue	...	...	...	3,55,125	2,95,150
Results on both direct and indirect charges	Profit			1,41,21,064	35,62,189

The total expenditure incurred during the year 1898-99 chargeable against 33—Famine Relief was Rs. (—) 566.

7. The areas irrigated by the Major Irrigation Works, during the year 1898-99 and the five previous years, are shown in the following statement:—

AREAS IRRIGATED.

YEAR.	ORISSA CANALS.				MIDNAPORE CANAL.				SONE CANALS.				TOTAL.			
	Kharif.	Rabi.	Perennial.	Total.	Kharif.	Rabi.	Perennial.	Total.	Kharif including five-year and long-term leases.	Perennial including five-year and long-term leases.	Perennial and hot-weather.	Total.	Kharif.	Rabi.	Perennial.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1898-94	100,405	2,904	316	103,625	88,768	...	...	88,768	290,538	68,458	19,790	309,776	466,097	60,308	20,006	556,065
1894-95	118,116	4,108	345	122,569	69,941	175	...	70,116	308,861	41,664	17,180	317,134	446,418	43,941	17,453	507,811
1895-96	111,181	7,900	420	119,501	65,251	...	...	65,251	301,405	115,343	18,904	305,232	437,867	123,232	18,514	579,613
1896-97	171,373	13,300	378	185,051	65,183	...	...	65,183	316,941	215,390	33,523	565,154	553,497	223,090	23,200	806,887
1897-98	182,041	7,018	546	190,605	72,206	...	...	72,206	309,901	103,371	31,013	443,445	559,308	110,266	31,569	701,233
Average of five years.	137,613	7,048	380	145,041	71,069	35	...	71,704	283,275	108,445	21,826	413,546	492,757	115,026	22,206	630,489
1898-99	189,134	5,089	624	194,847	70,741	4,100	...	74,901	304,778	110,035	25,983	440,796	564,633	110,284	26,607	710,544

The results of the working of each of the canal systems of the Province during the year will now be described separately, as in previous years.

GENERAL.

In all statements showing totals of receipts or expenditure, the figures are those of the Examiner of Accounts. In dealing with details, the figures of the Superintending Engineer have been taken.

ORISSA CANALS.

CAPITAL
ACCOUNT.

8. The Capital, Interest, and Revenue Accounts of these canals are given below:—

I.—CAPITAL ACCOUNT.

HEADS OF ACCOUNT.				Outlay during 1898-99.	Outlay to end of 1898-99.
1				2	3
DIRECT CHARGES.				Rs.	Rs.
I.—Works	...	...	...	72,229	1,88,53,980
II.—Establishment	...	...	...	16,495	46,81,444
III.—Tools and plant	...	...	...	1,034	20,71,663
IV.—Suspense accounts	...	...	...	(—)22,010	16
Loss by exchange	...	...	...	.....	2,68,070
Total				67,748	2,58,75,173
V.—Less—Receipts on Capital Account	...	...	...	.....	86,795
Net total Direct Charges				67,748	2,57,88,378
INDIRECT CHARGES.					
Capitalization of abatement of land-revenue	...	...	...	13	33,246
Leave and pension allowances	...	...	...	2,309	5,51,527
Total Indirect Charges				2,322	5,84,773

The construction estimate of these canals is closed. The works carried out during the year at a cost of Rs. 72,229 chargeable to the open Capital Account under the head 43—Minor Works and Navigation, were the construction of permanent outlets, Minor distributaries and village channels, and the restoration of the flood bank of the Kendrapara Extension Canal between Marshaghai and Jumboo which had been wrecked by the flood of July-August 1896. The last work was practically completed within the year.

INTEREST
ACCOUNT.

2.—INTEREST ACCOUNT.

	Rs.
Interest charges to end of 1897-98	2,27,67,013
Ditto for 1898-99	10,30,180
Total	2,37,97,193

3.-REVENUE ACCOUNT—(Actuals.)

REVENUE
ACCOUNT.

PARTICULARS.	EXPENDITURE—		PARTICULARS.	RECEIPTS—	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
<u>DIRECT CHARGES.</u>	Rs.	Rs.		Rs.	Rs.
I.—Works, mainten- ance, and repairs ...	4,15,789	3,78,227	Water rates ...	3,14,729	2,72,832
II.—Revenue manage- ment.	89,326	83,309	Navigation ...	2,11,279	1,72,649
			Miscellaneous ...	28,749	24,523
Total Direct Charges	5,05,115	4,61,536			
			Total ...	5,54,757	4,69,554
<u>INDIRECT CHARGES</u> ...	34,804	33,677			
Total Working Expenses	5,39,919	4,95,213			
Net revenue ...	12,005	(—)29,721	Less—Refunds of revenue.	2,833	4,062
Total ...	5,51,924	4,65,492	Total receipts ...	5,51,924	4,65,492

There was a decrease of Rs. 86,432 in the receipts, and of Rs. 44,706 in expenditure, the result being a deficit of Rs. 29,721, against a profit of Rs. 12,005 in 1897-98.

9. The following statement compares the earnings with the outlay for the last two years. The term "earnings" as applied to Irrigation denotes the assessed water-rate value of the Irrigation effected during the year; as applied to Navigation, it denotes the amount of tollage assessed during the year, together with the actual realizations of miscellaneous revenue charged to Navigation. The miscellaneous earnings are the actual receipts during the year under this head:—

EARNINGS.

Earnings.	1897-98.	1898-99.
	Rs.	Rs.
Irrigation ...	2,71,401	2,70,272
Navigation ...	2,10,017	1,67,807
Miscellaneous ...	28,749	24,523
Total	5,10,167	4,62,602
Deduct refunds	2,833	4,062
Net earnings	5,07,334	4,58,540
Outlay ...	5,39,919	4,95,213
Net deficit ...	32,585	36,673

FINANCIAL
RESULTS.

10. The revenue receipts and working expenses for the last ten years are tabulated below :—

PARTICULARS.	1890-91.	1891-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Water-rates	1,09,844	2,09,806	2,17,256	3,52,309	2,09,542	1,93,550	2,34,648	246,777	8,14,789	2,72,382
Navigation	84,632	1,21,408	1,35,002	1,18,757	1,43,911	1,15,201	1,08,378	1,94,100	2,11,279	1,72,649
Miscellaneous	15,747	13,708	17,548	26,532	23,122	24,321	24,196	33,340	28,749	24,523
Total	3,04,223	3,45,012	3,71,001	4,97,038	3,76,575	3,33,072	4,17,212	4,74,217	6,54,727	4,69,554
Less—Refunds of revenue	99	76	79	283	1,210	737	418	1,270	2,833	4,062
Total receipts	3,04,124	3,44,936	3,70,922	4,97,375	3,75,365	3,32,335	4,16,804	4,72,947	6,51,894	4,65,492
WORKING EXPENSES.										
Direct Charges.										
I.—WORKS, MAINTENANCE AND REPAIRS—										
Works (extensions and im- provements) ... ..	...	...	5,001	9,123	29,355	6,547	4,768	5,859	15,071	14,396
Repairs	2,31,068	2,22,639	1,70,637	2,30,360	2,36,368	2,28,252	1,95,069	2,17,693	2,18,134	1,79,329
Establishment, including Di- rection and Accounts	1,09,434	1,32,859	1,19,775	1,20,391	1,24,048	1,09,706	1,39,684	1,33,482	1,59,272	1,56,939
Tools and plant	19,722	13,351 1,225	27,023	19,457	34,801	24,532	22,061	17,578	23,312	27,039
Total	3,60,224	3,70,673	3,22,436	3,79,311	4,14,566	3,60,037	3,61,572	3,74,562	4,15,789	3,75,327
II.—REVENUE MANAGEMENT—										
Irrigation establishment	55,592	52,591	57,074	78,906	78,988	69,681	63,239	72,778	71,186	60,114
Navigation ditto	15,871	16,119	16,506	16,917	16,840	17,095	16,820	17,136	18,140	17,185
Total	71,373	68,710	73,580	95,823	95,828	86,776	80,059	89,913	89,326	77,299
Total Direct Charges	4,31,597	4,39,383	3,96,016	4,75,134	5,05,394	4,46,813	4,41,631	4,64,475	5,05,116	4,51,626
Indirect Charges.										
Capitalized abatement of land revenue ... ..	...	...	...	...	...	...	...	...	...	48
Leave and pension allowances	25,313	28,220	27,070	30,283	30,083	27,507	30,764	31,268	34,804	33,635
Total Indirect Charges	25,313	28,220	27,070	30,283	30,083	27,507	30,764	31,268	34,804	33,677
Total Working Expenses	4,56,910	4,67,603	4,23,086	5,05,417	5,35,477	4,74,320	4,72,395	4,95,743	5,39,919	4,85,313
Net revenue	(-)-1,52,786	(-)-1,22,667	(-)-52,164	(-)-8,043	(-)-1,60,112	(-)-1,50,975	(-)-65,591	(-)-22,796	12,005	(-)-20,721

LENGTHS OF
CANALS AND
DISTRIBUTARIES.

11. The following statement gives the lengths of the canals and distributaries and the areas protected, commanded and irrigated during 1898-99, compared with the previous year :—

NAMES OF CANALS.	1897-98.								1898-99.							
	Navigable canals.	Canals for irrigation only.	Distributaries with village channels.	Area protected from flood.	Area under command.	Area provided with distributaries.	Area irrigated.	Percentage of area irrigated to area provided with distributaries.	Navigable canals.	Canals for irrigation only.	Distributaries with village channels.	Area protected from flood.	Area under command.	Area provided with distributaries.	Area irrigated.	Percentage of area irrigated to area provided with distributaries.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Mahanadi Series.	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.	Acres.		Miles.	Miles.	Miles.	Acres.	Acres.	Acres.	Acres.	
Taldanda	51½	...	100½	75,278	75,278	24,901	17,806	71.30	51½	...	103	75,278	75,278	41,925	17,958	60.00
Machgong	4	98	210½	97,057	97,057	81,681	32,488	39.78	4	28	211½	115,476	115,476	115,476	33,103	91.00
Kendrapara	30	...	376	129,421	101,110	97,506	53,228	51.68	30	...	370	129,421	107,588	107,588	52,038	80.00
Gobri with extension	24	...	39	27,251	53,701	21,855	7,345	33.60	24	...	41	27,251	53,701	21,456	7,310	67.00
Pattamondi ... ..	...	47	108	65,690	51,520	44,939	15,243	33.90	...	47	108½	65,690	51,520	37,400	15,023	60.00
Kendrapara Extension	15	...	...	8,090	7,000	...	...	...	15	...	...	8,090	7,000	...	...	...
High Level Canal, Range I	33	...	151½	80,128	48,815	48,815	22,092	45.13	33	...	151½	80,128	48,815	47,737	22,232	40.00
Total Mahanadi Series	169½	75	663½	463,695	434,481	319,717	148,167	46.34	169½	75	671½	502,114	430,378	371,463	147,778	50.00
Brahmini-Bytural Series.																
High Level Canal, Range II	12½	...	...	...	10,000	...	3,343	...	12½	...	...	...	10,000	4,415	3,191	70.00
Ditto, do. III	19	...	40½	...	57,500	44,047	29,193	65.23	19	...	40½	...	57,500	50,313	29,245	60.00
Jajpur Canal	6½	...	79½	69,000	70,000	56,957	14,929	40.55	6½	...	80	69,000	70,000	35,644	14,640	50.00
Total Brahmini-Bytural Series	38	...	120½	60,000	137,500	81,034	47,435	58.53	38	...	120½	60,000	137,500	96,372	47,069	60.00
Total Orissa Canals	207½	75	1,094½	643,695	571,981	400,751	195,602	48.88	207½	75	1,101½	562,114	566,878	467,834	194,847	50.00

N.B.—In column 13 the areas which are under direct command from the Main Canals are included. Column 14 includes areas which cannot be irrigated unless the distributary system is extended.

* Includes the chautidars' jagir lands, but excludes areas, of which remission on account of non-irrigation was given.

† Ditto ditto ditto ditto on which the rates were not assessed on account of non-irrigation.

During the year there was no change in the lengths of the canals. In the length of distributaries there was an increase of $6\frac{1}{2}$ miles, due to the construction of minors. The areas shown as commanded and provided with distributaries were revised, as those shown last year were found to be incorrect.

The Superintending Engineer gives, on page 5 of his report, a statement which has been prepared to show the land commanded by the canals which is suitable, or otherwise, for irrigation. The following statement, which has been prepared from it, is interesting as showing the area which is likely to be irrigated ultimately :—

		Acres.	Percentage of gross area.
Gross area commanded by the canals ...	...	562,114	100·0
Area which has been provided with distributaries ...	...	467,834	83·2
(a) Area which has been found irrigable at the full rate (i.e. land which more generally requires irrigation) ...	207,326	...	36·8
(b) Area found irrigable at reduced rate (i.e. land which rarely requires irrigation) ...	21,640	...	3·8
Total area likely to be irrigated ...	...	228,966	40·6
Area which for one reason or another has been classed as not suitable for irrigation ...	...	238,868	42·4

This shows that about 40 per cent. of the gross area commanded by the canals, or about half the area commanded by existing distributaries, is suitable for irrigation. The remainder for one reason or another is not suitable or does not need irrigation.

12. The number of permanent and temporary outlets which were in use during the year are given in the following table :—

DIVISION.	Canal system.	Permanent outlets.	Temporary outlets.	Total.	Total area irrigated.	Average area per outlet.
1	2	3	4	5	6	7
		No.	No.	No.	Acres.	Acres.
Mahanadi	Taldanda ...	62	426	488	17,982	37
	Machgong ...	95	1,018	1,113	33,193	30
Brahmini-Byturni	Kendrapara ...	181	2,660	2,741	52,038	19
	Gobri ...	1	129	130	3,708	28
	Do. Extension ...	...	102	102	3,602	36
	Pattamoondi ...	8	437	445	15,023	34
Aequapada-Jajpur	High Level Canal, Range I	209	309	518	22,232	43
	Ditto, do. II	...	33	33	3,181	96
	Ditto, do. III	3	280	283	29,248	103
	Jajpur ...	...	307	307	10,624*	85
	Total, 1898-99 ...	559	5,601	6,160	190,414*	31
	" 1897-98 ...	525	5,793	6,318	195,602	31
	" 1896-97 ...	524	5,895	6,419	185,048	28

* NOTE.—In the case of the Jajpur Canal the area of the *kharif* season only is taken, as the *rabi* irrigation is done through natural channels without outlets. During the year a considerable number of permanent outlets was built in the Mahanadi Division and some in the Brahmini Byturni Division. The total increase was 34 compared with the previous year. In temporary outlets there was a decrease of 192.

RAINFALL.

13. The average rainfall of the last five years at thirteen stations, situated within the canal-irrigated area, is shown below for the *kharif* and *rabi* seasons:—

		AVERAGE OF THIRTEEN STATIONS.				
		1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1		2	3	4	5	6
		Inches.	Inches.	Inches.	Inches.	Inches.
Kharif season	July ...	16.84	8.89	13.93	13.71	9.34
	August ...	9.59	15.91	15.63	12.23	18.14
	September ...	6.79	8.37	9.42	7.48	8.70
	October ...	6.37	5.46	0.02	9.31	10.68
	Total ...	39.09	38.63	39.00	42.73	46.86
Rabi "	November ...	3.07	0.41	0.03	1.72	.....
	December ...	0.03	.....	.....	0.12	0.18
	January ...	0.02	.....	0.01	.....	0.06
	February ...	0.60	.....	2.87	0.07	0.37
	Total ...	3.72	0.41	2.91	1.91	0.61
Whole year ...		58.91	63.12	65.86	55.99	58.87

The average fall for the year was 58.87 inches, as compared with a mean average for the last 30 years of 57.45 inches. The average rainfall recorded at nine stations in the Central Provinces, from which area of country the Mahanadi river derives the greater part of the supply, was 48.68 inches in 1898-99, as compared with 52.45 inches in 1897-98.

IRRIGATION.

14. The assessed areas for the last ten years, with the yearly rainfall, are shown in the following statement:—

YEAR.	Kharif.	Rabi.	Perennial or sugarcane.	Total.	Rainfall.
1	2	3	4	5	6
	Acres.	Acres.	Acres.	Acres.	Inches.
1888-89 ...	156,319	2,779	194	159,292	49.07
1889-90 ...	180,568	5,897	162	186,627	67.95
1890-91 ...	175,829	4,250	220	180,299	63.17
1891-92 ...	173,453	3,943	289	177,685	61.03
1892-93 ...	158,025	2,594	333	160,952	56.43
1893-94 ...	100,406	2,904	216	103,526	74.83
1894-95 ...	118,116	4,102	343	122,561	58.91
1895-96 ...	111,131	7,909	420	119,460	63.12
1896-97 ...	168,533	13,121	375	182,029	65.86
1897-98 ...	185,158	6,972	546	192,676	55.99
Average of previous five years ...	136,669	7,001	380	144,050	63.74
1898-99 ...	186,171	5,054	624	191,849	58.87

NOTE.—The area irrigated during the year was 194,847 acres, against 195,602 in 1897-98. These areas include *chaukidars'* *jagir* lands which were excluded from assessment (*vide* paragraph 11).

The area assessed was 827 acres less than the year 1897-98, which showed the largest figure on record since the opening of the canals for irrigation, but it exceeds the average of the previous five years by 47,799 acres.

The Superintending Engineer says :—

"The total area assessed is slightly below that of the previous year, owing to a smaller *rabi* irrigation. This is always liable to fluctuations. It is almost entirely *dahua* (spring) rice situated in tracts open to floods, and at present we have no proper channels for leading the water to the tracts for which it is wanted. A scheme is under consideration for making a channel for this purpose, which, if it can be carried out, at not too great cost, should lead to an extension of *rabi* irrigation."

15. The following statement shows the details of the assessments, as compared with the figures of the two preceding years:—

CROP.	Rate per acre.	1896-97.		1897-98.		1898-99.	
		Area.	Amount.	Area.	Amount.	Area.	Amount.
1	2	3	4	5	6	7	8
	Rs. A. P.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
Kharif ... { Flow ...	1 8 0	130,504	1,97,590	164,819	2,47,548	165,026	2,47,946
... { Lift ...	1 0 0	...	...	...	...	...	...
Dhoya ... { Flow ...	0 8 0	13,287	6,656	19,177	9,594	19,749	9,942
Perennial crops ... { Lift ...	6 0 0	350	1,738	500	2,209	622	3,048
Dhoya ... { Flow ...	4 0 0	...	...	...	...	...	...
... { Lift ...	0 8 0	24	121	...	...	...	...
Rabi ... { Flow ...	0 8 0	...	...	...	...	24	39
... { Lift ...	2 0 0	...	...	...	...	...	...
... { Lift ...	0 5 0	...	...	...	...	...	...
Dhoya ... { Flow ...	1 8 0	...	...	...	...	...	...
... { Lift ...	0 8 0	31	51	...	...	...	...
Unauthorised irrigation ... { Kharif ...	...	...	...	...	...	...	...
... { Rabi ...	...	...	...	...	...	...	...
Additional kharif demand assessed after the close of the year. { Flow ...	...	20,173	95,119	1,055	1,519	1,178	1,694
Additional perennial crops assessed after the close of the year. { Dhoya ...	...	4,569	2,583	107	52	218	101
... { Flow ...	...	1	8	46	228	2	10
Additional rabi assessed after the close of the year. { Dhoya ...	...	13,064	19,565	6,972	10,261	5,030	7,592
... { Dhoya ...	...	26	39	...	...	...	...
Total ...	...	182,029	2,63,420	192,676	2,71,401	191,949	2,70,272

The total areas leased and assessed, as compared with the previous year, are shown below:—

CROPS.		1897-98.		1898-99.	
		Leased.	Assessed.	Leased.	Assessed.
1		2	3	4	5
		Acres.	Acres.	Acres.	Acres.
Long leases ...	...	189,451	185,097	191,019	186,058
<i>Season leases.</i>					
Sugarcane ...	...	546	516	624	624
Rice, Autumn ...	...	61	61	113	113
Rabi (including <i>dahua</i> rice) ...	...	10,051	6,972	5,122	5,054
Unauthorised rice ...	...	.....	.....	.....	.....
Total ...	...	200,109	192,676	196,878	191,849

The Superintending Engineer thus explains the difference between the areas leased and assessed:—

"The difference in the areas of long leases shown as leased and assessed is due to the exclusion from assessment of *chaukidars'* lands of 2,998 acres and to the non-assessment of lands which have been remitted as not irrigable, although they had been leased. The leased areas should have been reduced also by the areas so remitted, and instructions are being given to have the recorded areas amended accordingly."

The distribution by divisions and canal systems of the areas leased, irrigated and assessed is given in the following table, in which sugarcane is classed as *khari*:—

DIVISION.	Canal system.	1898-99.								
		LEASED.			IRRIGATED.			ASSESSED.		
		Khari.	Rabi.	Total.	Khari.	Rabi.	Total.	Khari.	Rabi.	Total.
1	2	3	4	5	6	7	8	9	10	11
BRAHMINI-HY-TURNI.	Kendrapara	51,944	114	52,058	51,934	114	52,048	51,017	113	51,130
	Gobri	3,959	126	4,085	3,532	126	3,658	3,541	126	3,667
	Do. Extension	3,633	14	3,647	3,533	14	3,547	3,546	14	3,560
	Pattamoondi	15,100	367	15,467	14,656	367	15,023	14,306	361	14,787
	Total	74,641	621	75,262	73,700	621	74,321	72,503	614	73,116
MAHANADI	Taldanda	18,348	7	18,355	17,975	7	17,982	17,705	7	17,712
	Machgong	33,357	28	33,385	33,165	28	33,193	32,674	28	32,702
	Total	51,705	35	51,740	51,140	35	51,175	50,379	35	50,414
ACQUAPADA-JAJ-PUR.	High Level Canal, Range I ...	22,208	21	22,229	22,211	21	22,232	21,626	21	21,647
	Ditto, do. II	2,006	213	2,219	2,006	186	2,192	2,087	183	2,110
	Ditto, do. III	22,442	216	22,658	22,033	210	22,243	21,635	206	21,841
	Jaipur	10,804	4,016	14,820	10,634	4,016	14,650	10,406	3,996	14,402
	Total	65,510	4,466	69,976	64,884	4,433	69,317	63,014	4,406	67,420
GRAND TOTAL		191,756	5,123	196,879	189,758	5,089	194,847	186,795	5,084	191,879

* Includes Perennial.

DUTY OF WATER.

16. The statement below shows the duties obtained in the *khari* season on each of the canals:—

	Supply at head.	Supply used for irrigation.	Duty on supply used.	Rainfall for period.
1	2	3	4	5
	Cubic feet. per second.	Cubic feet per second.	Acres per second.	Inches.
Taldanda system ...	759	653	78	46.96
Kendrapara " ...	1,117	1,031	71	46.08
High Level Canal, Range I	300	153	145	37.44
Ditto, do. II	35	35	85	35.83
Ditto, do. III	238	238	122	37.62
Jaipur Canal ...	113	90	113	42.63

The figures are of little value, as any duties calculated on averages are misleading. There was no opportunity of testing the real duty during a period of pressure, which is the only true test, as there was ample rain in October.

Some observations on the quantity of water required during the period when the rice is being ploughed in or transplanted in July and August were made in the Jajpur subdivision by Babu Kristo Dhone Banerjee, Supervisor. These showed that in the absence of rain, or with only slight assistance from rain, a duty of only 58 acres per cubic foot per second, as measured at the outlet, was obtained.

Details of the duty on each distributary are given in Appendix I. Until the outlets are adjusted so as to be suitable to the areas to be irrigated, and the supply in the distributaries can, consequently, be better regulated, the results obtained have but little value.

17. The following table gives the general results for the year 1898-99 of the crop experiments, classed under broadcast and transplanted rice:—

CROP EXPERI-
MENTS.

DIVISION.	ex. Number of periments.	IRRIGATED LANDS.										UNIRRIGATED LANDS.									
		BROADCAST.				ex. Number of periments.	TRANSPLANTED.				ex. Number of periments.	BROADCAST.				ex. Number of periments.	TRANSPLANTED.				
		Paddy.		Straw.			Paddy.		Straw.			Paddy.		Straw.			Paddy.		Straw.		
		Mds.	Srs.	Mds.	Srs.		Mds.	Srs.	Mds.	Srs.		Mds.	Srs.	Mds.	Srs.		Mds.	Srs.			
		1	2	3	4		5	6	7	8		9	10	11	12		13	14	15	16	17	18	19	20	21
Mahanadi	14	18	28	29	32	4	18	19	20	30	13	16	30	18	16	...	...	...	...	...
Brahmini-Byturni	15	26	6	41	20	6	25	9	48	29	15	16	37	30	14	5	14	30	16	30	
Acquapada-Jajpur	27	30	8	35	28	...	...	...	...	...	24	14	17	23	3	...	...	...	...	...
Average per acre	56	31	16	35	31	10	20	21	41	5	53	14	7	23	10	5	14	30	16	30	

A general abstract of the results of all the experiments made in the year under review is given in the following table:—

DIVISION.	Number of experiments.	AVERAGE OUT-TURN PER ACRE FROM IRRIGATED LAND. DRY WEIGHT.		Number of experiments.	AVERAGE OUT-TURN PER ACRE FROM UNIRRIGATED LAND. DRY WEIGHT.		VALUE TO CULTIVATORS OF OUTTURN FROM IRRIGATED LAND PER ACRE.		VALUE TO CULTIVATORS OF OUTTURN FROM UNIRRIGATED LAND PER ACRE.	
		Rice, lbs of paddy.	Straw.		Rice, lbs of paddy.	Straw.	Rice at 21 seers per rupee.	Straw at 9 maunds per rupee.	Rice at 21 seers per rupee.	Straw at 9 maunds per rupee.
1	2	3	4	5	6	7	8	9	10	11
		Mds.	Mds.		Mds.	Mds.	Rs.	Rs.	Rs.	Rs.
Mahanadi	18	12	30	13	7	18	24	3	14	2
Brahmini-Byturni	31	17	41	20	11	26	34	5	23	3
Acquapada-Jajpur	27	13	36	24	10	23	26	4	20	3
Average	66	14	37	57	9	22	28	4	18	3
Average for 1893-94 ... ..	...	11'30	24'56	...	9'46	31'62	25'29	2'73	20'25	2'40
" 1894-95 ... ..	...	19'39	50'38	...	17'68	37'91	32'86	5'60	39'82	4'24
" 1895-96 ... ..	...	17	37	...	15	33	26	4	23	4
" 1896-97 ... ..	...	17	38	...	14	35	32'4	4'2	26'6	3'7
" 1897-98 ... ..	...	17	29	...	15	28	30	3	27'3	3

The Superintending Engineer writes:—

"The result generally indicates that the crops, both irrigated and unirrigated, were inferior to those of the previous three years, and this, I understand, is the general opinion among the rice merchants. The difference in favour of the irrigated crops is very marked, but our experiments are on too small a scale to be of any great value, though they are undoubtedly of some use as giving indications of the comparative yield."

The average value of the rice outturn from the irrigated lands in Orissa is given by the Superintending Engineer as Rs. 28 per acre, while from the unirrigated lands it is given as Rs. 18 per acre.

18. The demands, collections, and balances of water-rates are shown below for the last five years:—

ASSESSMENT
AND COLLEC-
TIONS.

YEARS.	Amount outstanding at commencement of the year.	Amount falling due during the year.	Total for recovery.	Cash realizations.	Remitted or written off.	Balance at the end of the year.
1	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1894-95	63,350	1,68,449	2,31,799	1,93,550	6,109	32,140
1895-96	32,140	2,31,727	2,63,867	2,24,648	4,876	34,343
1896-97	34,343	2,35,517	2,69,860	2,46,777	18,486	4,597
1897-98	4,597	3,16,520	3,21,117	3,14,729	5,724	664
1898-99	664	2,73,191	2,73,855	2,72,382	1,473	Nil

There was no outstanding balance at the end of the year. This is very satisfactory and reflects much credit on the Deputy Collector, Babu Madhub Lall, and his staff. The demands were collected from more than 150,000 persons.

Of the total Rs. 1,473 remitted and written off, Rs. 1,338 were classed as remission, and Rs. 135 written off as irrecoverable. Including miscellaneous revenue, the total amount realized by the Deputy Collector was Rs. 2,73,211, as against Rs. 3,25,336 realized in the previous year.

CERTIFICATES.

19. The amount of certificate work done in each district is shown in the following statement:—

	CUTTACK.				BALASORE.				TOTAL.			
	1897-98.		1898-99.		1897-98.		1898-99.		1897-98.		1898-99.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
1	2	3	4	5	6	7	8	9	10	11	12	13
Cases for disposal—		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.
1. Cases pending at the close of the preceding year ...	3	23	...	...	...	...	...	...	2	23	...	...
2. Cases instituted during the year ...	980	10,740	614	4,940	207	1,932	72	940	1,167	12,681	686	5,880
Total ...	983	10,772	614	4,940	207	1,932	72	940	1,169	12,704	686	5,880
Cases disposed of—												
1. By being struck off ...	23	600	12	12	7	270	...	...	30	940	12	12
2. Wholly satisfied ...	959	10,168	602	4,928	200	1,662	72	940	1,139	11,764	674	5,868
Total ...	982	10,772	614	4,940	207	1,932	72	940	1,169	12,704	686	5,880
Balance ...	...	...	...	...	...	...	...	...	...	...	...	...

The number of certificate cases instituted has shown a marked decrease for some years past. This is most satisfactory and the Chief Engineer trusts that the decrease will still continue, as there is yet room for improvement. During the year under review the number of cases instituted was 686 against 1,167 in the preceding year, showing a decrease of 481 cases. The certificate process was only resorted to in extreme cases after every other effort to collect the water-rates had failed. There were no certificate cases pending at the close of the year under review, and in no case was any landed property sold or any defaulter sent to jail.

COMPLAINTS.

20. The following table shows the number of objections filed against assessment and disposed of during the year:—

DIVISION.	I.—ORDINARY REMISSIONS.				II TO V.—OTHER COMPLAINTS.			Total received during the year.	Pending at end of year.
	Received during the year and pending from previous year.	How disposed of—		Pending.	Received during the year and pending from previous year.	Disposed of.	Pending.		
		Remission allowed.	Remission refused.						
1	2	3	4	5	6	7	8	9	10
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Mahanadi	194	63	110	1	57	57	...	251	1
Brahmini-Byturni ...	201	71	130	...	22	20	2	221	2
Arquapada-Jaipur	224	134	62	8	24	24	...	248	8
Revenue	271	224	42	5	166	163	3	416	8
Total ...	690	512	344	14	269	204	5	1,132	19

The total number of cases received during the year was 1,132, as compared with 1,737 in the previous year. The number pending at the end of the year was reduced from 29 to 19: this is a moderate number.

21. The statement below gives the details of the amounts remitted and written off as irrecoverable during the year, on account of water-rates, &c., which were adjusted in the accounts by a reduction of demand, compared with the figures of the previous year:—

Revision of Assessment.

		1897-98.	1898-99.
		Rs.	Rs.
(a) Unirrigated crops	...	2,220	1,199
(b) Damage	...	461	43
(c) Chaukidar's jagir	...	42	28
Total	...	2,723	1,270

Remissions.

(a) Waste land	...	34	40
(e) Land occupied by canals	...	...	9
(f) Twice assessed	...	149	3
(g) Change of rates	...	2,368	2
(h) Erroneous assessments	...	83	14
(i) Loss of crops	...	349	...
(j) Error in accounts	...	...	...
Total	...	2,983	...

Written off.

Irrecoverable demands	...	20	135
Total	...	5,726	1,473
Deduct remissions under Miscellaneous Revenue	...	...	...
Net Remissions	...	5,726	1,473
Refunds authorised	...	2,536	3,328
GRAND TOTAL	...	8,262	4,801

The amount allowed to be written off as irrecoverable is insignificant and the fact is satisfactory. The account furnished by the Deputy Collector as to the progress made in paying out the amounts authorised to be refunded, is as follows:—

		Rs.
Balance on books as on 1st April 1898	...	895
Refunds authorised during year	...	3,328
Total	...	4,223
Payments made during year	...	8,995
Balance on books on 31st March 1899	...	228

This shows an improvement, and the accounts of these payments and of balance unpaid are now being kept in a more methodical manner.

22. There were no appeals to the Collectors of districts from the orders of Canal officers during the year. Eight cases were dealt with by the Superintending Engineer in revision of the proceedings of Divisional Officers. In two cases the decision of Divisional Officers was revised, and in six it was upheld.

23. *Criminal cases.*—In the Mahanadi Division there were three cases instituted, in two of which convictions were obtained and the third was dismissed. In the Brahmini-Byturni Division three cases were instituted, and in the Acquapada-Jajpur Division two cases, in all of which convictions were obtained. The cases were not of a serious nature.

REVENUE
ESTABLISH-
MENT.

24. The cost of the Revenue Establishment for the last five years is shown below :—

	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
<i>Establishment under Deputy Collector.</i>					
	Rs.	Rs.	Rs.	Rs.	Rs.
Permanent establishment, including travelling allowance.	43,679	42,735	43,840	46,942	46,572
Temporary establishment	11,166	6,161	14,812	7,886	4,221
Contingencies	3,206	2,457	2,634	3,346	2,520
Headmen's fees	80	172	48	12	...
<i>Establishment under Executive Engineer.</i>					
Permanent and temporary establishments, including travelling allowances.	8,568	8,905	8,623	9,653	9,266
Water-regulation establishment	2,982	2,809	2,821	3,347	3,535
Total	69,681	63,239	72,778	71,186	66,114
Collections of water-rates and miscellaneous revenue.	2,12,178	2,43,076	2,63,800	3,25,336	2,73,211
Percentage	32·8	26·01	27·58	21·88	24·19

There was a reduction in the cost of both permanent and temporary establishments employed under the Deputy Collector and the Executive Engineers which is so far satisfactory, but the Chief Engineer considers that there is room still for further economy in these establishments. A slight increase took place in the water-regulation establishment.

NAVIGATION.

25. The following statement shows the receipts from "Navigation" for the last five years:—

YEAR.	TALDANDA CANAL SYSTEM.		KENDRAPARA CANAL SYSTEM.		HIGH LEVEL CANAL, RANGE I.		HIGH LEVEL CANAL, RANGE II.		HIGH LEVEL CANAL, RANGE III.		JAJPUR CANAL.		TOTAL.	
	Number of miles open.	Tollage receipts.	Number of miles open.	Tollage receipts.	Number of miles open.	Tollage receipts.	Number of miles open.	Tollage receipts.	Number of miles open.	Tollage receipts.	Number of miles open.	Tollage receipts.	Number of miles open.	Tollage receipts.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	No.	Rs.	No.	Rs.	No.	Rs.	No.	Rs.	No.	Rs.	No.	Rs.	No.	Rs.
1893-94	55½	14,369	78	66,905	33	14,616	12½	3,691	19	3,026	6½	508	30½	1,10,115
1894-95	55½	16,024	78	65,090	36	10,567	12½	2,861	19	1,507	6½	461	30½	94,220
1895-96	56½	15,611	78	1,04,929	33	15,981	12½	3,890	19	1,990	6½	494	30½	1,46,617
1896-97	55½	26,366	78	1,04,986	33	20,031	12½	2,613	19	695	6½	311	30½	1,68,223
1897-98	55½	16,767	78	1,16,580	33	23,314	12½	2,354	19	1,120	6½	314	30½	1,64,169
1898-99	55½	22,226	78	65,313	33	21,468	12½	2,146	19	813	6½	341	30½	1,54,317

* Exclusive of the receipts from Transport Service and hire of boats and steamers.

The receipts during the year were considerably less than in the previous year. This was chiefly due to the opening of the Bengal and Nagpur Railway.

Regarding the articles of traffic carried on the canals, the Superintending Engineer writes:—

“There was a large reduction in the rice carried, due to slackness in the export trade from Orissa. The reductions in metals and building materials are due to less materials for the railway works having been brought over the canals.

There was some increase in oilseeds, salt and miscellaneous goods, but generally traffic was slack. The railway was open for goods traffic for a few months at the close of the year under review, but it cannot be said to have as yet had any effect on the goods traffic over the canals.”

The number of passengers carried during the year was 138,277 against 173,152 in the previous year, showing a reduction of 34,875. This was caused by the opening of the railway. It is probable that before long the passenger traffic on the canals will be almost entirely diverted.

The traffic on the Orissa Canals is detailed below for the last ten years, the Transport Service being excluded:—

	1899-00.	1890-01.	1891-02.	1892-03.	1893-04.	1894-05.	1895-06.	1896-07.	1897-08.	1898-09.
1	2	3	4	5	6	7	8	9	10	11
Number of miles open ... No.	177	177	204½	204½	204½	204½	204½	204½	204½	204½
Toll collections ... Rs.	78,030	1,00,961	1,20,761	1,00,503	1,19,115	98,220	1,42,817	1,59,262	1,64,189	1,86,317
Rate of toll per mile ...	440'9	604'3	589'8	460'8	581'7	489'9	699'5	770'9	801'9	908'7
Number of boats plying cargo and passengers including empties ... No.	25,163	31,737	31,742	31,003	22,982	19,670	25,185	25,546	23,121	23,026
Tonnage of cargo and passenger boats, including empties ... Tons	237,599	314,240	332,423	297,109	309,748	230,006	346,933	387,038	546,766	357,181
Estimated value of cargo, including rafts ... Rs.	48,09,265	66,21,551	95,40,786	84,09,728	71,00,437	51,72,772	77,09,323	1,00,14,777	1,17,13,163	1,00,83,914

26. The total receipts from the Transport Service amounted to Rs. 36,332 against Rs. 47,110 in the previous year, showing a decrease of Rs. 10,778. The cost of working the Transport Service was Rs. 15,989 for establishments, fuel and stores, and Rs. 4,087 for repairs, in addition to which Rs. 4,073 were spent in fitting up a passenger barge. The service worked at a profit of Rs. 12,183.

TRANSPORT SERVICE

The Superintending Engineer states:—

“The traffic was well maintained in the early part of the year, but fell off latterly on the temporary opening of the railway for passenger and goods traffic. After December 1899, when the railway will be opened permanently, this service will have to be withdrawn. It can be tried on the Taldanda Canal to see if enough traffic will offer to pay for the working.”

27. The following statement shows the Miscellaneous Receipts in detail for the last five years:—

MISCELLANEOUS RECEIPTS.

DETAILS.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sale of water	46	112	79	39	55	66	26
Plantations	1,244	2,514	2,520	2,398	2,346	2,325	3,628
Other canal produce	528	492	1,200	2,092	1,418	1,165	1,544
Rent of buildings	4,592	5,168	4,273	5,129	4,900	4,854	4,655
Fines	...	...	...	...	...	...	7
Miscellaneous { Rent of lands	2,247	2,248	11,129	11,052	8,568	7,849	11,784
" fisheries	1,191	740	1,740	1,187	1,507	1,213	1,185
Cost of process	4,951	5,593	2,478	2,041	1,524	3,317	560
Sale of old materials	...	...	56	48	2	29	...
Other items	1,023	454	591	8,744	8,829	8,928	1,134
Total	23,122	24,321	24,196	33,340	28,749	26,746	24,523

PLANTATIONS.

28. The following table shows the state of the plantations for the last two years:—

DIVISION.	Upwards of 12 feet.		Saplings from 4 to 12 feet.		Seedlings below 4 feet.		Total.	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9
Mahanadi ...	22,587	26,118	7,801	5,378	5,269	4,077	35,667	35,568
Brahmini-Byturni ...	45,980	46,899	12,432	11,118	13,776	16,832	72,188	74,849
Acquapada ...	18,184	19,283	4,827	6,956	4,906	3,707	27,867	32,946
Total ...	86,751	92,295	25,060	23,452	23,951	27,616	135,712	143,363

The receipts from plantations amounted to Rs. 3,628 against Rs. 2,346 in the previous year. The expenditure under this head chargeable to the Revenue Account was Rs. 1,403 against Rs. 1,033. There was no expenditure under Capital Account during the year.

FLOODS.

29. The maximum flood-levels recorded during the year are compared in the following table with the maximum levels in 1897-98 and with the highest recorded levels:—

NAME OF RIVER.	Locality.	1897-98.		1898-99.		HIGHEST RECORDED FLOOD.	
		Date.	Read- ing.	Date.	Read- ing.	Date.	Read- ing.
1	2	3	4	5	6	7	8
Mahanadi	Nara] above weir ...	14th August 1897	86'10	15th August 1898	85'30	26th July 1892	85'10
	Do. below weir ...	14th " "	86'05	15th " "	85'20	26th " "	82'10
	Jobra above weir ...	14th " "	70'00	15th " "	70'05	25th " "	75'35
Brahmini	Do. below weir ...	14th " "	68'80	15th " "	68'55	25th " "	74'65
	Janapur above weir ...	24th " "	64'70	24th " "	62'70	26th " 1894	69'60
	Do. below weir ...	24th " "	64'30	24th " "	62'40	26th " "	69'60
Byturni	Acquapada above weir ...	6th " "	58'10	10th " "	61'65	17th " 1891	66'60
	Do. below weir ...	6th " "	47'80	10th " "	55'40	17th " "	63'79
	Randia ...	2nd June " "	53'55	22nd " "	58'90	12th Sept. 1887	59'78
Salindi	Hellavue ...	14th August	75'81	13th " "	76'25	25th July 1892	83'50
Katjuri	Jagatpur above weir ...	5th October	66'05	22nd June " "	67'40	25th " 1896	72'40
Beropa	Do. below weir ...	15th August	65'55	22nd " "	65'20	25th " "	71'60
	Jokodia above weir ...	24th " "	63'60	10th August	61'30	26th " 1894	60'10
	Do. below weir ...	24th " "	63'10	10th " "	61'60	26th " "	68'70

The year under review was marked by an absence of any high floods in any of the rivers, a similar state of things to that which obtained during the previous year.

MAIN-
TENANCE AND
REPAIRS.

30. The charges for maintenance and repairs of the canals during the year compared with the five previous years are shown in the following statement:—

Charges.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Extension and improve- ments.	29,355	6,547	4,768	5,859	15,071	12,320	14,300
Head-works ...	45,757	59,800	57,291	52,859	64,746	56,091	44,615
Main and branch canals	1,27,400	1,21,928	83,277	1,10,116	1,03,547	1,09,253	82,456
Distributaries ...	29,261	27,950	32,694	31,658	29,445	30,202	28,370
Drainage and protective works.	8,237	5,480	8,946	14,734	11,616	9,803	12,904
Cost of working Trans- port Service.	15,707	13,094	12,851	8,326	8,780	11,751	10,984
Total ...	2,55,717	2,34,799	1,99,827	2,23,552	2,33,205	2,29,420	1,93,629

There was a reduction of Rs. 39,576 in the cost of maintenance and repairs, as compared with 1897-98, the chief economy lay in the expenditure on the main canals and on the distributaries.

The chief works carried out under "Extensions and Improvements" were the construction of a boat dock at Rahama on the Taldanda Canal, and a minor distributary from No. 11 distributary, Taldanda Canal; a wooden bridge across the Machgong Canal at Barabag cattle crossing; an extension of No. 11 distributary, Machgong Canal; a syphon under No. 19B.I. distributary, Machgong Canal; an extension of No. 2 distributary, Pattamoondi Canal; and two minor distributaries on the Pattamoondi Canal.

HEAD-WORKS.

31. The cost of maintaining each of the weirs is shown below:—

NAME OF WEIR.	Length.	EXPENDITURE.			RATE PER RUNNING FOOT.		
		1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8
	Feet.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Naraj ...	3,833	3,889	3,090	3,652	1.01	0.80	0.96
Mabanadi ...	6,349	14,018	20,372	13,970	2.21	3.20	2.20
Beropa ...	1,920	7,595	6,337	4,415	3.84	3.20	2.23
Barhamini ...	4,000	1,119	3,064	2,258	0.28	0.76	0.56
Pattia ...	7.3	3,200	4,634	6,357	4.09	5.92	8.12
Byturni ...	1,062	4,975	2,199	145	4.12	2.19	0.43
Burra ...	526	5,311	1,881	906	10.10	3.57	1.72
Total of all weirs ...	18,497	40,107	41,577	32,003	2.11	2.25	1.73

The expenditure on the weirs during the year was Rs. 9,574 less than the previous year and about Rs. 12,000 less than the average of the previous five years; this is satisfactory.

The miscellaneous charges incurred during the year on head-works, exclusive of those on the weirs, were Rs. 12,750 against Rs. 23,259 and Rs. 13,304 in the years 1897-98 and 1896-97.

32. The following statement shows the expenditure on each canal for the last three years:—

MAIN AND BRANCH CANALS.

MAIN AND BRANCH CANALS.			EXPENDITURE.			RATE PER MILE.		
			1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.
1			2	3	4	5	6	7
	Miles.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Kendrapara Canal ...	39	...	35,688	22,826	11,599	9.15	585	554
Kendrapara Extension Canal ...	15.	...	1,898	21,810	4,202	123	1,587	280
Pattamoondi Canal ...	47	...	7,433	6,720	5,451	156	143	115
Gobri Canal ...	15	...	6,791	8,498	7,189	453	562	479
Gobri Extension Canal ...	9	...	2,919	2,506	3,082	324	278	342
Taldanda Canal ...	51½	...	18,151	15,550	14,545	351	299	280
Machgong Canal ...	32	...	9,092	7,643	8,145	284	239	254
High Level Canal, Range I ...	33	...	15,085	8,433	11,028	457	255	334
Ditto, do. II ...	12½	...	2,455	1,897	1,029	196	150	130
Ditto, do. III ...	19	...	4,553	3,789	3,673	240	199	185
Jajpur Canal ...	6½	...	1,411	1,552	1,573	217	239	298
Total ...	279½	...	1,05,416	1,03,154	82,316	377	308	294

There was a reduction of Rs. 20,838 compared with the previous year.

The reason for increase and decrease of each of the canals is given below:—

Kendrapara Canal.—There was a considerable reduction in the charges for silt clearance and dredging.

Kendrapara Extension Canal.—The expenditure was normal. In the previous year, the heavy increase in cost was due to special work required for filling in the branches caused by the flood of July-August 1896.

Pattamondi Canal.—The expenditure was rather below normal.

Gobri Canal.—The cost of renewing the upper gates of the Kendrapara Lock and the lower gates of the Gundakia Lock, which was incurred partly in the previous year and partly in the year under review, was exceptional; otherwise the expenditure was ordinary.

Gobri Extension Canal.—The expenditure was a little more than in the previous year. The charges for repairs to canal banks were rather high, owing to the wash of steamers.

Taldanda Canal.—The expenditure was moderate. Some silt clearance was done in the first two miles of the canal where the bed was somewhat choked.

Machgong Canal.—The expenditure was about normal. It was a little more than in the previous year.

High Level Canal, Ranges I, II and III.—The expenditure was normal and moderate. In Range I the weeds were especially bad, as the canal was kept open throughout without any closure. When the steamer service is withdrawn, it will be necessary to close the canal for a considerable period each hot weather to destroy the weeds.

Jajpur Canal.—The expenditure was a little more than last year. It was due to substantial repairs to buildings having been carried out.

DISTRIBUTU-
TARIES.

83. The maintenance cost of the distributaries, per mile, is shown below. The average rate of Rs. 26 shows a decrease, as compared with the average mileage rates of 1897-98 and of 1896-97, which were Rs. 27 and Rs. 31, respectively. The cost is less than in the Sone Canals and is extremely moderate:—

	1896-97.			1897-98.			1898-99.		
	Miles.	Cost.	Per mile.	Miles.	Cost.	Per mile.	Miles.	Cost.	Per mile.
1	2	3	4	5	6	7	8	9	10
DISTRIBUTARIES.	No.	Rs.	Rs.	No.	Rs.	Rs.	No.	Rs.	Rs.
Kendrapara Canal System, including Gobri and Gobri Extension	419	10,871	26	419	10,183	25	239†	14,209	57
Taldanda Canal	99‡	2,485	25	100‡	2,540	25	...	...	...
Machgong Canal	210‡	5,008	24	210‡	4,085	23	312‡	5,030	23
High Level Canal, Range I	131‡	2,916	22	131‡	4,517	34	...	...	...
Ditto, Range III	49‡	2,447	49	49‡	1,808	37	200†	5,443	27
Pattamondi Canal	108‡	4,002	38	108‡	2,004	27	...	...	...
Jajpur Canal ... ..	...	231	...	70‡	2,555	38	...	...	...
Total	1,000‡	31,056	31	1,000‡	20,444	27	1,000‡	28,371	28

NOTE.—The lengths of distributaries in the above are those which have been brought on the revenue account, and consequently differ from the lengths given in paragraph 13 which include all so far advanced as to be fit for use, whether the capital account is still open or not.
* Includes length of Pattamondi canal.
† Includes length of Jajpur canal.

Regarding distributaries the Superintending Engineer remarks:—

“The expenditure was moderate—indeed, it was, if anything, too moderate, and some of the distributaries require to be brought to a higher standard. It will be as well to spend rather more in these very important works for the next few years. We have now leases nearly up to our full capacity, and it is necessary that the distributaries should be in a position to carry full supplies.”

The Chief Engineer concurs in these remarks: it is always difficult to determine the standard to which distributaries should be maintained, but, obviously, that standard should enable the channels to be thoroughly efficient.

DRAINAGE
AND
PROTECTIVE
WORKS.

34. The total expenditure on Drainage and Protective Works was Rs. 12,904 against Rs. 11,920 in 1897-98. It includes the upkeep of 207½ miles of flood embankments, and 279½ miles of drainage cuts.

On the Taldanda Canal system the expenditure was chiefly confined to raising the flood banks along the Suk Pyka river and at Paradip. The

expenditure on the other systems was normal, and does not call for any special comment.

35. The following table shows the cost of silt-clearing and dredging during the year 1898-99:—

DREDGING
AND SILT-
CLEARING.

NAME OF CANAL.	SILT-CLEARING.			DREDGING.		
	Quantity in cubic feet.	Rate per 1,000 cubic feet.	Cost.	Quantity in cubic feet.	Rate per 1,000 cubic feet.	Cost.
1	2	3	4	5	6	7
	C. ft.	Rs.	Rs.	C. ft.	Rs.	Rs.
Taldanda	1,032,270	3.3	3,392	1,73,823	8.6	1,500
Maohgong	44,034	3.1	138	...	...	...
Kendrapara	404,325	2.6	1,051	70,210	5.5	386
Ditto Extension ...	90,896	2.2	200	44,126	5.0	220
Gobri	391,620	2.5	979	15,278	6.0	90
Do. Extension ...	...	...	...	17,340	6.3	110
Pattamovndi	11,050	2.8	31	...	...	...
High Level Canal, Range I	215,372	5.1	1,089	1,68,709	4.2	711
Ditto, do. II	43,811	4.2	183	13,096	4.8	63
Ditto, do. III	2,900	2.4	7	...	...	...
Jajpur	12,765	2.4	31	...	...	...
Total	2,249,063	3.2	7,101	5,02,642	6.1	3,080
Total, 1897-98 ...	2,154,356	3.80	8,191	5,99,464	7.34	4,400

Some silt was removed from the heads of the Taldanda and Kendrapara Canals and from the head of the 1st Range of the High Level Canal. It was necessary to dredge the head of the Taldanda Canal, as there was an accumulation of sand, which was reducing the discharge and which could not be moved by the flow of the water. The remaining dredging was in the lock entrances and in clearing ring bunds made during closures. The high rate for the silt clearance in the 1st Range, High Level Canal, is due to the work being done without closing the canal. It was really of the nature of dredging, but by the manual labour instead of by steam.

The cost of raising and removing the silt lifted by steam dredgers is shown in the following table:—

NAME OF CANAL.	COST OF RAISING SILT BY DREDGING.			COST OF REMOVING SILT DREDGED.		
	Quantity in cubic feet.	Rate per 1,000 cubic feet.	Cost.	Quantity in cubic feet.	Rate per 1,000 cubic feet.	Cost.
1	2	3	4	5	6	7
	C. ft.	Rs.	Rs.	C. ft.	Rs.	Rs.
Taldanda	173,823	4.31	750	173,823	4.31	750
Kendrapara	70,210	3.75	263	70,210	1.75	123
Gobri	15,278	4.0	60	15,278	2.0	30
Do. Extension ...	17,340	4.25	75	17,340	2.0	36
Kendrapara Extension Canal	44,126	3.25	143	44,126	1.75	77
High Level Canal, Range I	168,709	2.0	339	168,709	2.12	372
Ditto, do. II	13,096	3.18	41	13,096	1.68	22

On the Taldanda Canal the high rate for lifting was due to some expensive works at the terminal lock at Paradip. Here Rs. 199 were spent in raising 18,600 cubic feet of silt, the cost of hauling the dredger 50 miles each way being a considerable item. For the silt taken out of the head of the canal 155,283 cubic feet were lifted at a cost of Rs. 549-12-10, which gives a rate of Rs. 3-65 per 1,000.

MIDNAPORE CANAL.

36. The Capital, Interest, and Revenue Accounts of this canal are given below:—

1.—CAPITAL ACCOUNT.

HEADS OF ACCOUNT.	Outlay during 1898-99.	Outlay to the end of 1898-99.
1	2	3
Direct charges	Rs. Nil	Rs. 83,12,324
Less—Receipts on Capital Account	Nil	31,558
Total direct charges	Nil	82,80,766
Indirect charges	Nil	1,84,661

The construction estimate of this canal was closed on 31st March 1889. There was no expenditure during the year chargeable to Capital Account.

2.—INTEREST ACCOUNT.

			Rs.
Interests charges to end of 1897-98 ... ..	...	...	83,93,059
Ditto for 1898-99 ... ..	...	...	3,31,230
Total ... ..	...	...	87,24,289

3.—REVENUE ACCOUNT (Actuals).

PARTICULARS	EXPENDITURE—		PARTICULARS.	RECEIPTS—	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
I.—Works, main-tenance, and repairs ...	1,95,036	2,29,594	Water-rates ...	1,19,909	1,07,554
II.—Revenue man-agement ...	34,048	35,069	Navigation ...	1,32,235	1,03,681
			Miscellaneous ...	23,492	22,537
Total direct charges	2,29,084	2,64,663	Total ...	2,75,636	2,33,772
INDIRECT CHARGES	11,148	9,317			
Total working ex-penses ...	2,40,232	2,73,980	Less—Refunds of revenue ...	1,599	5,040
Net revenue ...	34,865	(—) 45,248	Total receipts ...	2,74,037	2,28,732
Total ...	2,74,037	2,28,732			

37. The earnings of the Canal, i.e., the assessed water-rate value of the irrigation done during the year, the assessed tollage *plus* the actual miscellaneous receipts under Navigation, and the actual receipts under the head Miscellaneous, are compared below with the actual outlay:—

EARNINGS.		1897-98.	1898-99.
		Rs.	Rs.
Irrigation ...	...	1,13,079	1,12,841
Navigation ...	...	1,30,514	1,04,528
Miscellaneous ...	...	23,492	22,537
Total ...	...	2,67,085	2,39,406
Deduct refunds of revenue		1,599	5,040
Net earning...	...	2,65,486	2,34,366
Outlay ...	...	2,40,232	2,73,980
Net earned profit	...	(+)25,254	(-)39,614

38. The Revenue Receipts and Working Expenses of the Midnapore Canal for the last ten years are exhibited below:—

PARTICULARS.	1890-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Water-rates ...	1,16,484	1,15,438	1,32,981	1,49,087	1,65,030	1,34,889	98,069	1,00,618	1,10,908	1,07,554
Navigation ...	1,48,164	1,12,754	1,32,572	1,14,141	1,14,994	1,35,483	1,43,918	1,54,216	1,32,235	1,08,081
Miscellaneous ...	13,016	9,004	19,147	16,970	24,519	22,308	22,017	24,924	23,493	22,537
Total ...	2,77,664	2,37,196	2,84,700	2,80,177	3,04,543	2,94,692	2,63,994	2,79,767	2,75,636	2,38,172
Less—Refunds of revenue	181	206	3	176	174	239	861	1,000	1,699	5,040
Total receipts ...	2,77,483	2,36,991	2,84,697	2,80,001	3,04,709	2,94,453	2,63,633	2,78,667	2,74,037	2,33,132
WORKING EXPENSES.										
DIRECT CHARGES.										
<i>I.—Works, maintenance, and repairs.</i>										
Works (extensions and improvements) ...	...	...	...	3,798	8,138	11,083	5,755	9,056	7,001	10,630
Repairs (including compensation) ...	1,13,507	1,05,038	1,41,263	89,480	1,03,178	1,04,508	1,35,047	1,06,155	1,08,697	1,63,706
Establishment, including direction and accounts	29,753	30,503	35,378	34,631	22,661	29,910	44,967	45,896	45,533	51,482
Tools and plant ...	27,612	23,920	51,761	29,885	38,788	30,589	61,364	30,827	33,755	23,776
Total ...	1,70,873	1,68,569	2,38,301	1,56,736	1,72,985	1,65,104	2,37,163	1,91,864	1,95,036	2,29,604
<i>II.—Revenue management.</i>										
Irrigation establishment	21,903	22,800	21,973	23,011	30,215	23,661	30,592	23,663	26,176	28,978
Navigation ditto ...	7,719	7,711	7,750	7,658	7,857	8,080	8,115	8,310	8,872	8,001
Total ...	29,622	30,510	29,723	30,669	38,072	31,741	38,707	31,973	35,048	36,979
Total direct charges ...	2,00,495	1,99,079	2,68,024	1,87,401	2,01,057	2,16,845	2,65,870	2,23,837	2,29,084	2,66,583
Indirect charges ...	8,318	9,811	9,003	9,149	7,133	8,519	10,306	10,472	11,148	9,517
Total working expenses ...	2,08,813	2,08,890	2,77,027	1,96,550	2,08,190	2,25,364	2,76,176	2,34,309	2,40,232	2,76,100
Net revenue ...	68,670	68,101	77,670	83,451	96,519	69,089	(-)12,543	45,358	33,805	(-)42,968

On extensions and improvements an expenditure of Rs. 10,630 was incurred during the year against Rs. 7,001 in the previous year. The work carried out was the revetting of portions of the inner slope of the canal banks with laterite stone for protection against erosion caused by the wash of the steamers. The total length of the banks protected was 13,725 feet. The total expenditure, inclusive of indirect charges, was Rs. 2,73,980 against Rs. 2,40,232 in the previous year, or Rs. 33,748 more, which was mainly due to the abnormal flood of June 1898. The total receipts during the year were Rs. 45,305 less than the previous year. The net revenue of the year was a deficit of Rs. 45,248 against a profit of Rs. 33,805 in the year 1897-98.

LENGTHS OF
CANALS AND
DISTRIBUTA-
RIES.

39. In the following statement are tabulated particulars concerning the canals and distributaries. There has been no change in the lengths of canals and distributaries, or in the areas protected or commanded :—

NAME OF CANAL	1897-98.								1898-99.							
	Navigable canals.	Canals for irrigation and navigation.	Distributaries and village channels.	Area protected from floods.	Area under command.	Area provided with distributaries.	Area irrigated.	Percentage of area irrigated to area provided with distributaries.	Navigable canals.	Canals for irrigation and navigation.	Distributaries and village channels.	Area protected from floods.	Area under command.	Area provided with distributaries.	Area irrigated.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.	Acres.	Acres.	Miles.	Miles.	Miles.	Acres.	Acres.	Acres.	Acres.	
Under Midnapore weir	44	44	260'30	294,400	180,000	100,000	64,002	64'00	44	44	260'30	294,400	180,000	100,000	63,960	
Under Panchkurah weir	12	12	35'25	112,040		23,000	7,473	32'48	12	12	35'25	112,040		23,000	10,454	
Under Tidal reaches, Ranges I and II ...	16	16	18'00	30,080		2,000	732	30'60	16	16	18'00	30,080		2,000	1,307	
Total Canal Midnapore ...	72	72	313'55"	437,120	180,000	125,000	72,206	57'76	72	72	313'55"	437,120	180,000	125,000	74,901	

* Of this the length of distributaries is 283'97 miles, and village channels 29'58 miles.

OUTLETS.

40. The following statement shows the areas commanded by the distributaries, and the number of outlets in use :—

PORTION OF CANAL.	Total length of channel.	Area commanded.	NUMBER OF TEMPORARY OUTLETS.		NUMBER OF PERMANENT OUTLETS.	
			1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7
Under Midnapore weir ...	Miles. 230'72	Acres. 100,000	795	755	41	40
Do. Panchkurah weir ...	35'25	23,000				
Do. Tidal reaches, Ranges I and II ...	18'00	2,000				
Total ...	283'97	125,000	982	942	43	43

There was a decrease of 40 temporary outlets. The number of permanent outlets during the year remained the same as last year. It would appear to be desirable to increase the number of permanent outlet, and the question will be considered.

RAINFALL.

41. The average rainfall of the last five years at four stations within the canal-irrigated area is shown below :—

STATIONS.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	AVERAGE OF FORMER YEARS.	
						No. of years.	Average rainfall.
1	2	3	4	5	6	7	8
	Inches.	Inches.	Inches.	Inches.	Inches.		Inches.
Midnapore ...	48'99	48'39	50'17	55'32	59'18	30	55'35
Panchkurah ...	71'82	31'54	61'61	40'69	48'14	30	54'56
Luchmapur ...	54'23	39'50	53'92	48'63	52'55	14	55'63
Mowah ...	53'77	27'13	54'64	49'03	48'04	14	51'61
Average ...	55'90	30'66	55'08	48'63	51'48	...	54'29

The rainfall throughout the year was seasonable and favourable for the rice crops. It was heavy in June and August, when 15·64 and 13·82, inches respectively, were registered at Midnapore.

The rainfall in the *kharif* season was distributed as follows:—

MONTH.	Midna- pore.	Panch- kurah.	Luchma- pur.	Mowah.	Average, 1898-99.	Average, 1897-98.
1	2	3	4	5	6	7
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
July ...	12·42	9·83	12·71	7·07	10·51	6·96
August ...	13·82	10·52	10·84	12·03	11·80	10·00
September ...	8·82	8·70	7·36	7·93	8·20	5·84
October ...	4·93	4·73	4·17	3·51	4·34	6·29
Total <i>kharif</i> season, 1898-99.	39·99	33·78	35·08	30·54	34·85	29·09
Do. 1897-98 ...	32·52	26·06	30·62	27·16	29·09	...

42. The areas of the crops irrigated during 1898-99 and the ten previous years, as also the average annual rainfall, are shown below:—

YEAR.	Kharif.	Rabi.	Perennial.	Total.	Rainfall.
1	2	3	4	5	6
	Acres.	Acres.		Acres.	Inches.
1888-89 ...	66,408	3,369	...	69,777	62·13
1889-90 ...	68,370	440	...	68,810	44·47
1890-91 ...	82,002	...	...	82,002	55·68
1891-92 ...	83,905	68	...	83,973	51·81
1892-93 ...	91,217	...	...	91,217	41·28
1893-94 ...	79,550	6,213	...	85,763	70·63
1894-95 ...	69,941	175	...	70,116	55·90
1895-96 ...	65,251	...	...	65,251	36·66
1896-97 ...	65,183	...	...	65,183	55·08
1897-98 ...	72,206	...	...	72,206	48·52
Average of previous five years ...	70,426	1,278	...	71,704	53·36
1898-99 ...	70,741	4,160	...	74,901	51·48

Average of four stations throughout the irrigated areas under the Midnapore and Panch-
kurah weirs.

LEASES.

The total area irrigated during the year was 74,901 acres, including 4,160 acres of *boro* rice classed as *rabi*, as compared with 72,206 acres of the previous year, showing an increase of 2,695 acres. There was no *rabi* irrigation in 1897-98. The area of *kharif* irrigation was slightly less than that of last year.

43. The total area under lease during the year was 76,696 acres, against 72,206 acres in the previous year, showing an increase of 4,490 acres. The following table gives particulars regarding the leases:—

PARTICULARS.	KHARIF.			Sugarcane and other perennial irrigation.	Rabi.	Total.	REMARKS.
	Long leases.	Annual leases.	Surreptitious irrigation.				
1	2	3	4	5	6	7	8
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
Leases in force in 1897-98...	71,960	32	214	.....	.....	72,206	
Deduct leases which expired at the end of 1897-98 ...	4,990	32	214	.....	.....	4,606	
Leases in force at the beginning of 1898-99 ...	67,640	.....	.....	.....	.....	67,640	
Deduct area cancelled and deducted during the year	811	.....	.....	.....	.....	811	
Net area ...	66,829	.....	.....	.....	.....	66,829	
Leases executed during 1898-99 (area under provisional licenses and area brought under lease directly, together with the increased area brought under lease after measurement).	5,707	.....	.....	.....	4,160	9,867	
Leases in force during 1898-99 ...	72,536*	.....	.....	.....	4,160	76,696	
Deduct leases and provisional license which will expire at the end of 1898-99 ...	3,134	.....	.....	.....	4,160	7,294	
Leases in force at the beginning of 1899-1900 ...	69,402	.....	.....	.....	.....	69,402	

* Out of this leased *kharif* area, 1,795 acres which were not irrigated during the year owing to damage done by floods were excluded from assessment.

The Superintending Engineer states:—

"It will be seen from the above table that the area leased under *kharif* was slightly greater than that of the previous year. The area under *rabi* is also shown in the above table, although the water-rates for *rabi* will not be realized until 1899-1900. The total area under lease was not fully irrigated during the year. This was due to an abnormal flood in the Cossye on the 19th June 1898, which breached the Main Canal and also Nos. 1 and 4 distributaries, and thus rendered irrigation impossible for about two months. Fortunately the rainfall was seasonable, so the want of canal-water was not much felt, except on an area of about 6,000 acres on No. 1 distributary, for which a remission of a third of the water-rates was granted. As the flood-water did not subside quickly enough, a large area in the Panchkurah subdivision was thrown out of cultivation, which was afterwards cultivated with *boro* rice. In the Balichak subdivision a limited area could not be irrigated owing to obstructions caused by the new railway. These two areas amounting to 1,795 acres have been excluded from assessment as noted in the statement. A 10 per cent. deduction on account of increase in area by measurement was allowed, as in previous years, an area of 490 acres being thus excluded from lease in 160 villages, the leases of which were completed after measurement during the year. An area of 2,978 acres represents the net increase brought under lease after measurement of the villages, which were previously under provisional license."

44. The duty obtained from the discharge utilized is given below for the last three years:—

DUTY OF WATER.

		Under Midnapore weir.	Under Panchkurah weir.	Tidal Reaches, Ranges I and II.	Total.
1		2	3	4	5
1896-97	{ Kharif ... } Acres ...	56,334	7,763	1,086	65,183
	{ Duty on gross supply ... }	232	228	...	...
	{ Rabi ... } Acres ...	...	...	...	...
1897-98	{ Duty on discharge utilized ... }	...	...	...	...
	{ Kharif ... } Acres ...	64,000	7,472	732	72,206
	{ Duty on gross supply ... }	173	146	...	...
1898-99	{ Rabi ... } Acres ...	...	...	...	...
	{ Duty on discharge utilized ... }	...	...	...	...
	{ Kharif ... } Acres ...	62,950	6,394	1,397	70,741
	{ Duty on gross supply ... }	434	274	...	...
	{ Rabi ... } Acres ...	...	4,160	...	4,160
	{ Duty on discharge utilized ... }	...	191	...	...

The duties on this canal are generally very large, but some of them are quite abnormal, and, indeed, only possible under most extraordinary circumstances. The matter will be enquired into and further details given in the next report.

45. The total number of experiments made on land irrigated with canal water was 26. The average outturn of the irrigated crop per acre was 17 maunds 27½ seers of paddy and 36 maunds 3 seers of straw. The number of experiments made on unirrigated land was 26. The average outturn of the unirrigated crop per acre was 17 maunds 17½ seers of paddy and 33 maunds and 9 seers of straw weighed dry. The Executive Engineer reports that in one experiment made by the Subdivisional Officer of Luchmapur, the paddy weighed wet 30 maunds 25 seers and straw 82 maunds 28 seers per acre.

CROP EXPERIMENTS.

In addition to the above, twelve experiments were made by the zilladars under the Special Deputy Collector, Revenue Division. They gave an average outturn of 17 maunds of paddy and 33 maunds of straw, weighed dry, per acre on irrigated land, against 16 maunds of paddy and 32 maunds of straw per acre on unirrigated land.

The crop experiments on the Midnapore canal are not as fully reported as they should be.

46. The balances, assessments, and recoveries of water-rates on the Midnapore Canal during the last five years are shown in the following statement:—

ASSESSMENTS, COLLECTIONS, AND BALANCES.

YEAR.	Amount outstanding at commencement of year.	Amount falling due during the year.	Total for recovery.	Cash realization.	Remitted or written off.	Balance at the end of the year.
1	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1894-95	7,027	1,35,016	1,42,043	1,36,882	612	4,549
1895-96	4,549	1,04,111	1,08,660	98,059	477	10,124
1896-97	10,124	1,05,660	1,15,784	1,00,618	3,727	11,439
1897-98	11,439	1,13,079	1,24,518	1,19,909	1,091	3,518
1898-99	3,518	1,12,341	1,15,859	1,07,554	2,587	5,718

There was a decrease of Rs. 738 in the assessments, and Rs. 12,355 in the collections during the year as compared with the corresponding figures of the previous year, and an increase of Rs. 1,496 in remissions granted. The outstanding balance at the end of the year showed also an increase of Rs. 2,200.

Regarding the increase and decrease the Superintending Engineer writes:—

"Though the balance was a little larger than that of the preceding year, the collections must be taken to be satisfactory, considering the peculiar circumstances. Owing to damage caused to the canal by floods, the villagers at the beginning of the irrigation season could not get water. In October, when the crops were ripening, a plague of grasshoppers came and attacked the rice in No. 1 distributary and did considerable damage, so that the cultivators did not get a good outturn. As a rumour got about that remissions would be granted to those villages in which the crop suffered, the villagers in the Antra subdivision declined to pay up their rates. Notices had therefore to be served in the villages explaining that if remissions were sanctioned by Government, the amount realized would be refunded, but meanwhile the assessment due must be paid in full. It was on this account that the balance at the end of the year was greater than that of the previous year."

"Out of Rs. 1,07,554 collected, Rs. 3,275 only were realised by certificate procedure. Twelve tahsildars had to realise a water-rate demand of Rs. 1,04,243 from 39,544 rate-payers in 933 villages within a period of three months. As a matter of fact, the greater part of the demand was realized in two months. The result cannot but be considered satisfactory, and reflects great credit on the Special Deputy Collector and his staff."

REMISSION. 47. The sum of Rs. 2,587 was remitted during the year 1898-99, against Rs. 1,091 in the previous year.

The following are the details:—

	Rs.	A.	P.
Remission granted by Superintending Engineer under rule 28 of the Midnapore Canal Rules ...	103	8	3
Remission granted by the Special Deputy Collector under rule 24, clause I ...	144	4	6
Remission granted by the Special Deputy Collector under rule 24, clause II ...	2,141	6	3
Total ...	2,389	3	0
On account of one-third remission granted, <i>vide</i> Bengal Government letter No. 3821, of 23rd March 1899 ...	197	15	0
GRAND TOTAL ...	2,587	2	0

The remissions granted during the year were considerably more than in the previous year. They chiefly come under rule 24, II, for damage to crops on account of non-supply of canal-water owing to breaches caused by the flood already referred to. A large number of notices of remissions were issued during the year.

CERTIFICATES. 48. The extent to which recoveries by means of certificates were made during the year is shown in the following statement:—

PARTICULARS.	MIDNAPORE.			
	1897-98.		1898-99.	
	No.	Amount.	No.	Amount.
1	2	3	4	5
<i>Cases for disposal.</i>				
1. Cases pending at the close of the preceding year ...	31	Rs. 200	6	Rs. 80
2. Cases instituted during the year ...	427	3,740	347	3,970
Total ...	458	3,940	353	4,050
<i>Cases disposed of.</i>				
1. By being struck off, owing to the demand having been remitted ...	10	62	4	28
2. By being wholly satisfied ...	442	3,798	345	3,926
Total ...	452	3,860	349	3,954
Balance outstanding at the close of the year	6	80	4	96

The number of certificate cases instituted during the year was 347, against 427 in the previous year, showing a satisfactory decrease of 80. The number of outstanding cases at the end of the year was 4 against 6 of the year before.

No judgment-debtor was arrested, nor was the immoveable property of any judgment-debtor sold during the year. In one case a warrant of arrest was reported to have been resisted. On enquiry, however, the evidence not being found satisfactory, no prosecution was instituted.

49. The number of complaints filed during the year, and the nature of their disposal, is shown in the following statement:—

YEAR.	Class of complaints.	RECEIVED.			DISPOSED OF.			BALANCE PENDING AT END OF THE YEAR.		
		Balance pending from previous year.	Received during the year.	Total.	Allowed.	Refused.	Total.	Received during previous year.	Received during the year.	Total.
1	2	3	4	5	6	7	8	9	10	11
1897-98 ...	Ordinary remission ...	81	261	342	122	169	291	...	...	...
	Other complaints ...	1	59	60	30	24	54	...	...	51
	Total ...	82	320	402	152	193	345	...	...	57
1898-99 ...	Ordinary remission ...	51	608	659	343	241	584	...	...	75
	Other complaints ...	6	137	143	124	19	143	...	...	7
	Total ...	57	745	802	467	260	720	...	...	82

It will be seen that out of a total number of 802 cases against 402 in 1897-98, 720 cases were disposed of by the Special Deputy Collector during the year, against 345 in the preceding year. The increase in the number of complaints was due to the large number of applications filed by the villagers for remission of water-rate owing either to non-supply of water or damage to crops by flood-water.

50. The cost of the revenue establishment during the last five years is shown below:—

ESTABLISHMENT UNDER THE COLLECTOR.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
Permanent establishment, including travelling allowances.	18,436	17,530	18,650	19,654	20,799
Temporary establishment ...	1,289	332	1,566	2,476	3,242
Contingencies ...	873	677	1,111	1,689	1,304
Headman's fees ...	813	656	...	...	...
Total ...	21,411	19,195	21,327	23,819	25,345

REVENUE
ESTABLISH-
MENT.

In addition to the above, the following sums were paid by the Executive Engineer for water regulation:—

Water regulation.			
		Permanent.	Temporary.
		Rs.	Rs.
1894-95	...	1,187	263
1895-96	...	1,208	129
1896-97	...	1,095	241
1897-98	...	1,219	138
1898-99	...	1,633	...

51. The navigation receipts were Rs. 1,03,681, against Rs. 1,32,235 in the previous years, showing a decrease of Rs. 28,554. The decrease was partly due to the plague, partly to depression in trade, but mainly to the opening of the Bengal-Nagpur Railway. The passenger traffic by the steamers has decreased by nearly 20 per cent. in two years; but there is not any marked decrease, as yet, in the passengers carried by native boats, owing, probably, to the fact that this traffic is mainly between Uluberia and Bansberia only, while the steamer passengers, who chiefly go to and from Calcutta, are more affected by the railway.

NAVIGATION.

The Superintending Engineer writes:—

"The tolls received from the Calcutta Steam Navigation Company are almost the same as last year. This is due to the fact that during the year the tollage for the daily double service in the canal was raised from two-fifths to half full tolls and for special trips from half to three-fifths full tolls. These rates will remain in force until the railway enters into direct competition with the canal. The causes which led to the decrease in the private tolls from Rs. 94,566 in 1897-98 to Rs. 66,336 in the year under review, will be explained in the following paragraphs."

"There was a general falling-off both in the export and import trade, the total quantities of goods exported and imported during the year being 53,960 and 43,511 tons, against 86,265 and 45,234 tons, respectively, in 1897-98. The traffic in 1896-97 was the best on record, but that was due to famine in other districts which increased the export trade, and the construction of the Bengal-Nagpur Railway gave a great impetus to the import traffic."

"The decrease in trade was due partly to the panic caused by the presence of plague in Calcutta, and also to the high flood in the river in June which did considerable damage to the canal banks. The low rates for produce in Calcutta were also not favourable for exports."

"The portion of the canal from Midnapore to Panskura and the Narainghur Distributary was closed for silt clearance and repairs from the 20th March to the 20th April 1898, and again from 19th June to 8th July 1898."

"The traffic on the portion of the canal from Midnapore to Buramulla was stopped by the flood of 19th June 1898, which breached the canal banks in several places. Although traffic on the main canal was restored on the 8th July, it was not till the 21st of August 1898 that the Narainghur Distributary could be re-opened."

"Under 'Exports' decreases are noticeable principally in the case of 'rice' (11,600 tons), 'other food-grains' (15,000 tons), 'sugar' (850 tons), 'building materials' (3,600 tons) and 'miscellaneous goods' (1,500 tons). There was a slight increase in 'oil-seeds' (450 tons) and 'timber' (600 tons). Under 'Import' the principal items which contributed to the decrease were 'oils' (550 tons), 'salt' (850 tons), 'building materials' (900 tons), 'miscellaneous goods' (650 tons), and 'coal and coke' (2,600 tons), the only item which showed any important improvement being 'other food-grains' (4,800 tons). The increase in the import of "other food-grains" was wholly in paddy brought from Calcutta to the Ghatal subdivision of the Midnapore district and the neighbouring tracts, where the effect of the extraordinary high flood in June was most disastrous. The rise in the importation of coal and coke, which began in 1895-96, and was very high in the following year, is gradually falling off as the railway works are approaching completion, and although it was reduced by about 2,600 tons this year, it is still above the normal by about 3,000 tons. The total value of imports and exports was respectively 61 lakhs of rupees and 50 lakhs against 66 and 82 lakhs in 1897-98."

The following statement shows the quantities and values of rice and paddy carried during the principal months of the year as compared with those of 1897-98:—

MONTHS.	1898-99.				1897-98.			
	RICE.		PADDY.		RICE.		PADDY.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
1	2	3	4	5	6	7	8	9
		Rs.		Rs.		Rs.		Rs.
September ...	1,334	1,23,438	1,701	84,427	3,504	4,10,212	3,054	3,04,110
October ...	1,810	1,75,328	1,700	77,263	3,347	3,80,004	1,596	94,703
November ...	910	79,587	2,245	90,118	3,201	2,50,250	2,427	1,32,037
December ...	909	74,500	1,941	61,083	3,402	3,08,396	3,137	95,190
January ...	1,145	78,017	2,005	91,948	1,795	1,78,510	3,617	1,87,186
Total ...	6,008	5,30,800	10,391	4,14,337	18,309	14,46,467	12,831	6,73,196

The table illustrates the decrease in trade in these items which are the ones which form the bulk of the traffic on the canal.

Particulars regarding the traffic on the canal for the last ten years are tabulated below:—

DESCRIPTION.	1890-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
Miles open ... No.	78	78	78	78	78	78	78	78	78	78
Toll collections ... Ra.	1,10,409	80,556	(a)11,32,572	(a)11,14,141	(a)11,14,494	(a)11,35,472	(a)11,43,918	(a)11,54,215	(a)11,32,235	(a)11,03,000
Rate of toll per mile ...	2,196	1,039	1,841	1,585	1,537	1,832	1,980	2,143	1,837	1,640
Number of boats, including empty boats ... No.	82,060	45,054	43,324	40,438	36,910	30,378	43,633	45,492	43,008	36,227
Tonnage of boats ... Tons.	402,418	417,803	411,892	410,003	369,091	420,300	451,203	507,950	464,677	376,879
Passengers carried ... No.	170,226	187,700	103,836	(b)305,804	(b)303,033	(b)216,025	(b)227,906	(b)239,333	(b)233,065	(b)218,181
Estimated value of cargo, including ... Ra.	1,45,12,442	1,45,33,391	1,26,65,734	1,26,04,204	1,23,50,436	1,24,00,708	1,27,43,136	1,33,78,237	1,47,94,019	1,11,73,775

(a) Inclusive of tolls paid by the Calcutta Steam Navigation Company.

(b) Inclusive of passengers carried by the Calcutta Steam Navigation Company's steamers.

TRAFFIC.

52. The miscellaneous receipts for the last five years were as follows:—

MISCELLANEOUS RECEIPTS.

DETAILS.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sale of water ...	4	...	...	119	15	28	...
Plantations ...	44	65	18	28	36	36	103
Other canal produce ...	2	1	88	28	16	27	...
Rent of buildings	712	890	973	1,166	1,004	94	1,020
Fines ...	...	...	...	...	...	...	7
Miscellaneous. { Rent of lands	12,468	12,049	10,890	14,953	19,891	13,850	19,258
" of fisheries	1,479	1,507	1,440	1,664	1,434	1,505	1,299
Cost of process	2,173	722	833	672	592	890	509
Other items ...	7,437	7,081	8,775	6,904	514	6,023	341
Total ...	24,819	22,308	22,017	24,924	23,492	23,412	22,537

53. The expenditure on plantations during the year was Rs. 143 against Rs. 111 of the previous year. The following table compares the condition of the plantations in 1898-99 with 1897-98:—

YEAR.	Trees upwards of 12 feet high.	Saplings between 4 and 12 feet.	Seedlings below 4 feet.	Total.
1	2	3	4	5
	No.	No.	No.	No.
1897-98 ...	16,358	4,789	4,187	25,334
1898-99 ...	16,122	4,824	4,552	25,498

54. The following table shows the highest levels of the Cossye and Rupnarain rivers, compared with those of last year, and with the highest recorded levels:—

FLOODS.

River.	Locality.	1897-98.		1898-99.		HIGHEST RECORDED.	
		Date.	Reading.	Date.	Reading.	Date.	Reading.
1	2	3	4	5	6	7	8
Cossye ...	Midnapore above weir ...	10th August 1897 ...	85'00	19th June 1898 ...	93'30	19th June 1898 ...	93'30
	Ditto below weir ...	Ditto ...	80'00	Ditto ...	Not observed.	Ditto ...	Not observed.
	Panchkurah above weir	Ditto ...	82'30	16th September 1898	32'50	10th October 1878 ...	35'00
Rupnarain	Ditto below weir	Ditto ...	33'10	Ditto ...	Not observed.	Ditto ...	34'00
	Dainan ...	10th July 1897 ...	15'30	1st September 1898	15'50	20th August 1898 ...	17'30
	Kanjapukhur ...	Ditto ...	15'41	Ditto ...	16'30	Ditto ...	16'30

* Highest previous recorded flood at Midnapore 93'30 in 1898.

There were unprecedented floods in the rivers Cossye and Selye on the 19th of June 1898. The maximum height of the flood at Mohunpore was 93'30 and at the workshops 95'50 against 92'30 and 91'70, the previous highest

known readings. The flood caused an immense amount of damage to the canal works. The river Cossye broke through the dock embankment at Mohunpore, and, the flood water passing down the canal, caused breaches in both embankments of the first reach, and did very considerable damage to the distributaries, particularly to Nos. 1 and 4. At Latchmapore the right bank was breached just above the lock, for a length of about 200 feet, and the earth, behind the upper abutments, was scoured out to a depth of 30 feet. Two big breaches occurred in Reach II. One, just above Buramulla lock, was 250 feet in length. The head sluice of No. 28 distributary which was at the site of this breach was carried away completely. The spill on the left bank of the Cossye scoured the north abutment of the anicut to its foundations and severely damaged the apron near the same place.

MAINTENANCE
AND REPAIRS.

55. The actual cost of maintenance and repairs during the last five years is shown below:—

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
Head works, including buildings.	9,480	15,461	23,774	12,693	9,260	14,724	21,476
Main canal and branches...	67,404	68,702	77,291	65,331	74,899	70,725	94,310
Distributaries ...	20,932	18,501	24,601	25,222	19,485	21,748	40,260
Drainage and protective works.	2,058	1,240	3,261	1,898	2,171	2,126	4,684
Working steam-launches and <i>bholios</i>	3,354	598	3,120	3,011	2,832	2,593	2,976
Total ...	1,03,178	1,04,502	1,35,047	1,08,155	1,08,697	1,11,916	1,63,706

The outlay during the year was Rs. 55,009 more than that of the preceding year. The increase took place in all items of the charges. It was mainly due to the very heavy flood of June 1898, which did considerable damage to the canal works, banks and distributaries.

HEAD-WORKS.

56. The expenditure on head-works was Rs. 15,601 against Rs. 5,660 in the previous year, showing an increase of Rs. 9,941. On ordinary repairs Rs. 9,075 were expended, and on flood-damage repairs Rs. 6,526.

The expenditure on the Midnapore and Panchkurah head-works during the year was Rs. 15,601 and Rs. 5,875, respectively, against Rs. 5,660 and Rs. 3,600 in the previous year. On weirs the expenditure was at the rate of Rs. 2.91 per foot run at Midnapore, and Re. 1.7 at Panchkurah, as compared with Re. 0.92 and Re. 1.68, respectively, last year.

MAIN CANAL.

57. The mileage rate for repairs to the main canal was Rs. 2,572, as compared with Rs. 1,858 in the previous year. This, again, was due to heavy repairs made necessary by the flood.

The cost of working steam-launches and *bholios* used for inspection purposes was Rs. 2,976 against Rs. 2,832 in 1897-98. This expenditure was chiefly confined to working the steam-launch *Kabaduck* and Superintending Engineer's inspection launch *Maud*.

The expenditure on Tools and Plant was Rs. 23,776, as compared with Rs. 33,755 in the previous year. The outlay was mainly incurred on thorough repairs to dredging plant at a cost of Rs. 19,499.

DISTRI-
BUTARIES.

58. On distributaries, the expenditure on repairs was Rs. 40,260, or Rs. 142.26 per mile, against Rs. 19,485, or Rs. 68.85 per mile, in the previous year.

The damage caused to distributaries Nos. 1, 4 and 6 by the flood of June 1898 was excessive, the banks being levelled down in places and the beds filled up especially in the first reaches, where the flood-water was hemmed in between the canal and the railway embankment. No additions or alterations were made to any of the distributaries during the year.

The cost of maintenance per mile of both the main canal and the distributaries is given below for each of the last ten years:—

YEAR.	MAIN CANAL AND HEAD WORKS, &c.			DISTRIBUTARIES.		
	Length of canal open.	Total cost of work.	Rate per mile.	Length of distributary channels.	Total cost of work.	Rate per mile.
1	2	3	4	5	6	7
	Miles.	Rs.	Rs.	Miles.	Rs.	Rs.
1889-90	48	93,739	1,953	283	19,769	69
1890-91	48	98,187	1,941	283	11,851	41
1891-92	48	1,90,897	2,727	283	10,366	36
1892-93	48	74,818	1,558	283	12,612	44
1893-94	48	82,246	1,713	283	20,931	74
1894-95	48	86,001	1,792	283	18,501	65
1895-96	48	1,10,446	2,301	283	24,601	87
1896-97	48	82,933	1,728	283	25,222	89
1897-98	48	89,212	1,858	283	19,485	69
1898-99	48	1,28,446	2,572	283	40,360	142

The rate of the distributaries is generally very high.

59. The following statement shows the quantity of work done by each dredger and excavator, and the amount expended on their working during the year:—

DREDGING AND SILT CLEARING.

NAME OF DREDGER.	Quantity of earth dredged.	Actual cost of lifting.	COST OF REMOVING.			Lifting rate per 1,000 cubic feet.	Removing rate per 1,000 cubic feet.	Total rate per 1,000 cubic feet.
			Steam-hopper barges and S. L. Crickel.	Ordinary hopper barges.	Total.			
1	2	3	4	5	6	7	8	9
	C. ft.	Rs.	Rs.	Rs.	Rs.			
Hector	2,083,395	10,948	2,963	...	13,811	5'30	1'42	6'08
Ajas	2,613,329	0,224	8,715	...	9,939	3'38	1'42	5'20
Atlas	1,824,270	4,870	3,598	...	7,468	2'08	1'42	4'08
Combination	...	320	...	...	320	...	...	...
Cadmus	668,100	3,151	...	...	3,151	4'71	...	4'71
Total for 1898-99	7,193,100	25,613	9,276	...	34,889	3'53	1'39	4'82
Total for 1897-98	4,870,508	20,141	9,777	...	29,918	4'13	1'00	5'13

The quantity of silt excavated during the year was considerably more than in the previous year, viz., 7,193,100 cubic feet, against 4,870,508 cubic feet in 1897-98. The cost of lifting and removing was Rs. 34,889, as compared with Rs. 29,918 in the year previous. The rate per 1,000 cubic feet was Rs. 4'82 against Rs. 5'13 in 1897-98: a decrease in rate usually attends an increase in quantity, but the result is satisfactory.

The total quantity of silt cleared by hand during the year was 1,761,998 cubic feet at a cost of Rs. 8,114, or Rs. 4-9-8 per 1,000 cubic feet against 1,151,404 cubic feet at Rs. 7,011, or Rs. 6-1-6 per 1,000 cubic feet in the preceding year. The reduction in cost of the removal of silt was due to the fact that local labour was available at a cheaper rate, as the men could not obtain further employment on the Bengal-Nagpur Railway in the Midnapore district.

60. The receipts from all sources show a decrease of Rs. 45,305, and the working expenses have exceeded those of last year by a sum of Rs. 33,748. The net revenue has decreased from that of last year by a sum of Rs. 79,053. The loss in revenue is mainly due to the depressed state of trade, and the increase in working expenses was caused by the heavy expenditure which had to be incurred in making good the damage done to the canal by the unprecedented flood of June 1898.

GENERAL RESULTS.

HIJILI TIDAL CANAL.

CAPITAL
ACCOUNT.

61. The Capital, Interest and Revenue accounts of this canal are given below:—

1.—CAPITAL ACCOUNT.

HEAD OF ACCOUNT.	Outlay during 1898-99.	Outlay to end of 1898-99.
1	2	3
	Rs.	Rs.
DIRECT CHARGES	Nil	25,62,654
Less—Receipts on capital account	Nil	925
Net total direct charges ...	Nil	25 51,729
INDIRECT CHARGES.		
Capitalization of abatement of land revenue	Nil	11,210
Leave and pension allowances	Nil	52,303
Total indirect charges ...	Nil	63,513

The remodelling works on the canal were completed in the year 1896-97. During the year no expenditure was incurred chargeable to capital account.

INTEREST
ACCOUNT.

2.—INTEREST ACCOUNT.

		Rs.
Interest charges to end of 1897-98	21,39,517	
Ditto for 1898-99	1,02,069	
Total ...	22,41,586	

REVENUE
ACCOUNTS.

3—REVENUE ACCOUNT (Actuals).

PARTICULARS.	EXPENDITURE—		PARTICULARS.	RECEIPTS.	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
I.—Works, maintenance and repairs ...	38,759	43,792	Water-rates ...	...	...
II.—Revenue manage- ment ...	3,910	3,763	Navigation ...	90,755	73,759
Total Direct Charges ...	37,669	47,555	Miscellaneous ...	1,455	1,527
Indirect Charges ...	1,719	2,474	Total ...	92,210	75,286
Total working expenses...	39,388	50,029	Less—Refunds of revenue ...	779	980
Net revenue ...	52,043	24,277	Net total receipts	91,431	74,306
Total ...	91,431	74,306			

62. The following statement shows the receipts on revenue account and working expenses for the last ten years:—

FINANCIAL RESULTS.

PARTICULARS.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Navigation	40,338	37,145	36,348	52,180	58,809	57,089	60,677	89,511	90,755	73,759
Miscellaneous	1,614	899	567	1,282	1,487	1,486	1,299	1,485	1,455	1,527
Total	41,952	38,044	36,915	53,462	60,296	58,575	61,976	90,996	92,210	75,286
Less—Refunds of revenue ... ..	...	...	...	72	...	...	...	779	...	960
Total Receipts	41,952	38,044	36,915	53,390	60,196	58,585	61,976	90,946	91,431	74,306
WORKING EXPENSES.										
DIRECT CHARGES.										
<i>I.—Works, maintenance, and repairs.</i>										
Works extensions and improvements ... ..	...	...	...	...	1,935	4	16,718	...	...	4,116
Repairs	16,713	27,012	33,368	16,447	39,077	36,148	30,186	33,343	31,302	31,674
Establishment, including direction and accounts	4,167	8,636	11,483	5,563	12,614	9,770	13,966	8,189	8,367	13,912
Tools and plant	1,806	13,457	1,683	5,363	3,901	5,417	3,906	4,000	4,000	4,180
Total	22,676	49,135	46,714	27,372	60,617	41,339	54,960	34,502	33,709	43,794
<i>II.—Revenue management.</i>										
Navigation establishment	3,030	3,533	2,965	4,332	3,700	4,140	4,020	3,988	3,910	3,763
Total Direct Charges	25,716	51,968	49,680	31,704	64,317	45,479	58,980	38,490	37,619	47,556
INDIRECT CHARGES	1,007	1,006	2,014	1,385	2,344	1,947	2,518	1,701	1,719	2,474
Total working expenses	26,722	53,574	50,693	33,089	66,661	47,426	61,498	40,191	39,338	50,029
Net revenue	15,230	(—)25,530	(—)13,778	20,301	2,095	11,650	578	50,755	52,093	24,277

The working expenses were Rs. 50,029, as compared with Rs. 39,388, in 1897-98. On extensions and improvements, the following works were completed or in progress during the year:—

Two lock-bridges—one at Etamagra and the other at Terapakia, for which an estimate amounting to Rs. 3,990 was sanctioned.

A new toll office at Gewankhali: this was sanctioned at a cost of Rs. 1,496, but the expenditure of the year was Rs. 611 only. The work could not be completed owing to the delay in the arrival of iron-work from England.

A weir in front of the Gewankhali supply sluice: this is to exclude the heavy silt-laden water from the supply channel when the sluice is working: the expenditure on this work was Rs. 1,627.

The canal was maintained in an efficient condition throughout the year. The total cost of maintenance, and repairs (exclusive of extensions and improvements, but inclusive of establishment and tools and plant and indirect charges), was Rs. 45,913, as compared with Rs. 39,388 in the previous year. There were no special repairs done to the canal. The whole length was open to traffic throughout the year, with the exception of a short length (about 6,670 feet), which was cross-banded for silt clearance by hand labour. This, however, did not cause any interruption to traffic, as the supply channel at Gewankhali was used for navigation purposes. About one-third of the work was completed during the year under report. The remaining portion will be cleared during 1899-1900.

63. The length of the Canal, Ranges I and II, remains the same as last year, viz., 29 miles from the junction of the lock channel and the Hooghly river at Gewankhali to Kalinagar on the Rassalpur river, of which 12½ miles are in the former range, including the Haldi river crossing, and 16½ miles in the latter. The supply channel at Gewankhali will probably have to be eventually extended still further, as a considerable quantity of silt is carried beyond the supply channel into the canal.

LENGTHS OF CANAL, SUPPLY CHANNEL AND PASS KHAL.

64. The rainfall registered at Contai was 55.62 inches against 61.38 inches in the previous year. It was below the average in May and June, up to the average in July, August and September, and in October it was heavier than usual. At Etamagra the rainfall was 55.47 inches against 45.55 inches in the previous year.

RAINFALL.

NAVIGATION.

65. The traffic statistics of the canal for the last ten years are given below :—

PARTICULARS.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
Miles open ... No.	30	30	30	30	30	30	30	30	30	30
Toll collections ... Rs.	(a)40,941	(a)27,145	(a)34,346	(a)53,180	(a)58,200	(a)57,060	(a)60,677	(a)69,511	(a)90,755	(a)73,759
Rate of toll per mile ..	1,360	901	1,145	1,772	2,007	1,902	2,022	2,316	3,119	2,543
Number of boats, including empty boats No.	13,785	10,315	15,333	16,084	14,716	15,133	15,093	22,979	21,438	17,694
Tonnage of boats ... Tons	194,005	91,114	133,575	166,239	1,78,640	193,345	208,574	269,595	292,272	229,306
Passengers carried ... No.	(b)30,323	(b)22,480	(b)27,320	(b)46,489	60,061	(b)34,951	(b)27,551	(b)26,075	(b)33,036	(b)23,451
Estimated value of cargo, including ... Rs.	37,30,729	30,78,973	34,97,735	53,56,530	48,37,400	44,35,309	46,34,328	69,55,120	77,30,215	53,13,220

(a) Inclusive of tolls, paid by the Calcutta Steam Navigation Company.
(b) Inclusive of passengers carried by the Company's steamers.

The tollage receipts were Rs. 73,759 against Rs. 90,755 in the previous year, showing a decrease of Rs. 16,996.

The Superintending Engineer writes :—

“The number of boats that took tickets was 17,694, as compared with 21,438 of 1897-98, and the gross tonnage was 2,29,306 against 2,82,272 in the preceding year. It will be seen from the above that the tonnage and number of boats passing and the tollage receipts were less than in the previous year. The falling-off in tollage was chiefly owing to diminished export trade in rice, paddy and straw due partly to the plague scare and also to the low prices which prevailed in the Calcutta market.

“The receipts from steamer companies were Rs. 6,729 against Rs. 5,787 in the previous year, of which the Calcutta Steam Navigation Company paid Rs. 6,337. The number of passengers carried was 22,422 against 19,924 in the previous year. The India General Steam Navigation Company paid Rs. 392 as tollage on steamers and barges going to Calcutta for repairs and returning therefrom. A few goods and passengers were also taken by them for which they paid Rs. 78 as tollage.

“The exports of rice and paddy were less during the year, but there was an increase in the export of jute, hides and skins.

“Altogether 52,020 tons of rice passed through the canal against 68,911 tons in the preceding year. Its distribution by ranges is given below :—

	1898-99.	1897-98.
1	2	3
	Tons.	Tons.
Range I ...	21,793	30,239
Range II ...	13,777	16,286
Both Ranges I and II ...	16,450	22,286
Total ...	52,020	68,911

“The import trade on the Hijili Tidal Canal showed a decrease in rice, miscellaneous goods, metal, salt, tobacco, coal, coke and mustard, as compared with the previous year, while there were increases in sugar, other food-grains, kerosine oil and building materials.

“The issue of through tickets from Kalinagar to Gewankhali and vice versa was sanctioned by Government from 1st February 1899. The effect of this concession in rates in drawing traffic from the Bassalpur and Haldi rivers will be reported on next year.”

MISCELLANEOUS RECEIPTS.

1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
Rs. 987	Rs. 1,436	Rs. 1,299	Rs. 1,435	Rs. 1,455	Rs. 1,322	Rs. 1,527

67. The following table shows the state of the plantations for the last two years :—

YEAR.	Trees up-wards of 12 feet in height.	Saplings from 4 to 12 feet in height.	Seedlings under 4 feet.	Total.
1	2	3	4	5
	No.	No.	No.	No.
1897-98 ...	6,683	5,789	436	12,908
1898-99 ...	7,714	5,121	5,276	18,111

The receipts during the year were Rs. 22 against Rs. 14 in the previous year, and the expenditure was Rs. 57 against Rs. 42. The increase in the number of trees was due to a more correct count having been taken by the Executive Engineer.

68. There were no high floods in 1898-99 in any of the rivers crossed by the canal, and no breaches occurred. The following statement shows the highest-flood levels recorded at the locks of the rivers Hooghly, Haldi and Rassalpur during the year compared with the previous year and the highest known floods.

FLOODS.

	1897-98.		1898-99.		Highest known flood.	
1	2	3	4	5	6	7
Hooghly river at Gewankhali lock	115'30	On 13th August 1897	115'30	On 3rd August 1898	113'33	Cyclonic storm, 1874
Haldi river at Etamagra lock ...	115'50	Ditto ...	115'30	On 1st September 1898.	120'23(a)	.....
Rassalpur river at Kalinagar lock	114'10	On 14th August 1897	114'30	On 4th August 1898	118'50	29th August 1898.

(a) Mr. Vertannes' record without date.
NOTE.—Etamagra readings have been given instead of those at Terapakia. Mr. Vertannes' record refers to Etamagra, and it being a subdivisional head-quarters and close to the river gives better returns than Terapakia. Datum is 103'97 below mean sea-level at False Point.

The highest canal level in Range I at Etamagra was 112'50 on 15th September 1898, and in Range II at Kalinagar it was 112'20 on 13th March 1899 against 112'80 on 25th November and 111'80 on 15th August 1897, respectively.

69. The quantity of silt dredged from Ranges I and II of the canal, and the cost of lifting and removal are shown in the statement below :—

DREDGING AND
SILT CLEAR-
ING.

NAME OF DREDGER.	Cubic feet dredged.	Cost of lifting 1,000 c.ft.	Cost of removing 1,000 c.ft.	Total cost of 1,000 c.ft.	Site of work.
1	2	3	4	5	6
Marchant No. I ...	297,750	4'31	5'00	9'31	Range I, Gewankhali supply channel. Bund between supply channel and main canal at Gewankhali and Gewankhali lock chamber.
Ditto	17,500	12'74	5'03	17'77	Range II at Terapakia.
Bruce No. II (new) ...	549,000	3'51	5'00	8'51	Range I and Gewankhali supply channel.
Ditto	40,000	3'51	5'00	8'51	Range II at Terapakia.
Total ...	904,250	3'95	5'00	8'95	

No dredging was done in the Sadar khal, which was in a much better state during the year.

The dredgers were kept at work in Ranges I and II, 846,750 c.ft. and 57,500 c. ft. of silt, respectively, being removed at a total cost of Rs. 8,100, as compared with 53,400 c. ft. and 77,500 c. ft. removed from these two ranges during the previous year at a cost of Rs. 5,613. The cost of maintenance per mile of the year was Rs. 1,617, as compared with Rs. 1,385 per mile in the preceding year.

In Range I of the canal the only silt clearance done by hand labour was near Gewankhali. Out of the total length of 6,670 feet to be silt-cleared, about one-third of the work was done during the year. The amount of silt removed was 111,560 c. ft., at a cost of Rs. 798, or an average rate of Rs. 7.15 per 1,000 c. ft., against Rs. 5 per 1,000 allowed last year. Owing to great demand for labour in the neighbourhood, this higher rate was unavoidable.

70. The results of the year are disappointing. There is an increase in expenses and decrease of revenue; the latter, however, is probably only due to the depression in trade and is one of the fluctuations which must be expected.

SONE CANALS.

71. The Capital, Interest and Revenue Accounts of these canals are given below:—

I.—CAPITAL ACCOUNT.

HEADS OF ACCOUNT.	Outlay during 1898-99.	Outlay to end of 1898-99.
1	2	3
DIRECT CHARGES.	Rs.	Rs.
I.—Works	12,522	1,88,07,937
II.—Establishment	2,809	52,16,639
III.—Tools and plant	(—) 43,788	21,83,914
IV.—Suspense accounts	13	22
Loss by exchange ... ..	.....	52,240
Total	(—) 28,444	2,62,60,152
V.—Less—Receipts on Capital account	3,000	4,17,150
Net total Direct charges	(—) 31,444	2,58,43,002
INDIRECT CHARGES.		
Capitalization of abatement of land revenue... ..	.....	37,911
Leave and pension allowances	393	8,79,585
Total Indirect charges	393	9,17,496

The construction estimate of these canals is closed. During the year the original works sanctioned and carried out, chargeable to the open capital account under 43—Minor works and Navigation, were an escape channel from the Kathrain distributary, Gurra Chowbey Branch Canal, and some permanent outlets on distributaries for long leased areas. The total expenditure incurred on their construction and in completing some of the permanent outlets and regulators, and the syphon and sub-distributary from the Behea Branch Canal, which were in progress in the previous year, was Rs. 12,522. Other original works for extensions and improvements, the estimated cost of each of which, for works alone, amounted to Rs. 1,000 or under, were charged to the revenue account, in accordance with the rules laid down in paragraph 36, Chapter V, Volume II of the Public Works Department Code.

II.—INTEREST ACCOUNT.

INTEREST
ACCOUNT.

	Rs.
Interest charges to end of 1897-98	2,28,09,309
Ditto for 1898-99	10,34,349
Total	2,38,43,658

III.—REVENUE ACCOUNT (ACTUALS).

PARTICULARS.	EXPENDITURE—		PARTICULARS.	RECEIPTS.	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
I.—Works, maintenance and repairs	3,82,755	3,87,525	Water-rates ...	11,42,244	9,29,016
II.—Revenue management ...	1,79,840	1,68,102	Navigation ...	88,426	1,05,564
Total Direct charges	5,62,595	5,55,627	Miscellaneous ...	36,304	40,685
Indirect Charges ...	55,547	52,618	Total ...	12,66,974	10,75,265
Total Working Expenses ...	6,18,142	6,08,245	Less—Refunds of Revenue ...	12,184	3,853
Net revenue, profit ...	6,36,648	4,63,167	Total receipts ...	12,54,790	10,71,412
Total ...	12,54,790	10,71,412			

72. The following statement compares the "Earnings" with the actual outlay for the years 1897-98 and 1898-99:—

Earnings—			1897-98.	1898-99.
			Rs.	Rs.
Irrigation ...	...	...	9,26,830	9,38,607
Navigation ...	...	...	87,429	1,05,087
Miscellaneous ...	...	...	36,304	40,685
Total			10,50,563	10,84,379
Deduct refunds of revenue			12,184	3,853
Net earnings	...	...	10,38,379	10,80,526
Outlay	...	...	6,18,142	6,08,245
Earned profit			4,20,237	4,72,281

73. The following is a statement of the revenue account and working expenses of the canal for ten years:—

	1899-00.	1890-01.	1891-02.	1892-03.	1893-04.	1894-05.	1895-06.	1896-07.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Water-rates ...	8,16,394	6,44,718	6,11,750	9,68,070	8,42,809	7,43,243	6,77,714	9,57,780	11,42,244	9,39,016
Navigation ...	57,759	65,029	66,517	89,089	60,025	58,498	61,261	70,000	88,426	1,05,564
Miscellaneous ...	23,342	26,128	31,827	29,314	29,578	35,030	33,148	30,861	36,304	40,685
Total	8,97,495	7,35,875	6,10,094	10,66,373	9,31,912	8,37,761	7,72,123	10,64,693	12,66,974	10,75,265
Less—Refunds of revenue	16,520	7,305	4,020	3,792	6,237	2,927	8,507	6,046	12,184	3,853
Total Receipts	8,80,975	7,28,570	6,06,074	10,62,581	9,25,675	8,34,834	7,63,616	10,60,646	12,54,790	10,71,412
WORKING EXPENSES.										
DIRECT CHARGES.										
I.—Works, maintenance and repairs.										
Works (extensions and improvements)	4,712	3,363	2,812	6,541	7,419	10,972	20,428	25,029	12,365	6,230
Repairs, including compensation	9,92,992	9,73,831	9,59,832	9,80,579	9,63,922	9,30,227	1,39,067	1,51,717	1,40,015	1,57,194
Establishment, including direction and accounts	1,62,067	1,48,895	1,69,196	2,06,810	2,22,212	2,31,720	2,00,094	1,63,041	2,16,927	2,07,728
Tools and plant ...	23,460	28,627	24,943	29,031	27,206	27,543	16,351	23,400	13,448	14,363
Total	6,13,831	6,03,516	6,61,883	6,23,961	5,22,766	4,90,471	3,67,980	3,63,197	3,82,755	3,87,525
II.—Revenue management.										
Irrigation establishment	1,62,823	1,45,528	1,52,113	1,59,300	1,49,732	1,46,960	1,42,311	1,50,530	1,02,838	1,52,692
Navigation ditto	14,305	14,242	14,264	14,430	14,301	14,391	14,200	14,964	16,963	16,410
Total	1,77,128	1,59,770	1,66,377	1,73,730	1,64,123	1,61,251	1,56,571	1,65,494	1,19,804	1,69,102
Total Direct charges	6,80,959	6,63,286	6,48,260	6,97,691	6,86,889	6,51,722	5,24,551	5,28,671	5,02,559	5,56,627
INDIRECT CHARGES.										
Capitalization of abatement of land revenue	...	...	...	...	...	...	...	...	...	...
Leave and pension allowances	48,971	46,813	49,780	53,556	54,087	55,017	49,935	46,793	55,547	52,618
Total Indirect charges	48,971	46,813	49,780	53,556	54,087	55,017	49,935	46,793	55,547	52,618
Total working expenses	7,29,930	7,10,099	6,98,040	7,51,247	7,40,976	7,06,739	5,74,486	5,97,404	6,18,142	6,08,245
Net revenue	1,51,045	27,071	2,08,234	3,01,334	1,84,699	1,28,095	1,90,082	4,63,161	6,36,648	4,63,167

The water-rate receipts during the year were Rs. 2,13,228 less than in the previous year, 1897-98. This is due to the fact that the former year was an exceptional one, mainly owing to the fact that the water-rates on the large area of *rabi* irrigated in the famine year 1896-97 were collected in 1897-98. They were, however, more than the average of the last five years by Rs. 56,369. The navigation receipts for the year showed an increase of Rs. 17,138 over those of the preceding year, and were the largest on record since the opening of the canals for traffic. This increase is not likely to be maintained as it is largely due to the construction of the Mogulsarai-Gya Railway.

Under "Working expenses" the works carried out were—the construction of regulators in distributaries, permanent outlets, culverts under roads in connection with village channels, tahsil sheds, remodelling of roofs of lock khalsis' sheds with Allahabad tiles, and minor improvements to drainage. The cost of maintenance and repairs exceeded that of the previous year by Rs. 17,179. The increase was owing to the removal of silt above and below the locks and at the bifurcation by hand, and more extensive repairs to the masonry works.

The Eastern Main series of canals was closed from 26th April to the 5th June 1898, and the Western Main series from 26th March to 9th April 1898.

LENGTHS OF
CANALS AND
DISTRIBUTARIES.

74. The following table shows the length of canals and distributaries in operation and the areas commanded, provided with distributaries, and irrigated at the close of each of the last two years, respectively:—

NAME OF CANAL.		1897-98.								1898-99.							
		Navigable canals.	Canals for irrigation only.	Distributaries.	Area protected from flood.	Area under command.	Area provided with distributaries.	Area irrigated.	Percentage of area irrigated to area provided with distributaries.	Navigable canals.	Canals for irrigation only.	Distributaries.	Area protected from flood.	Area under command.	Area provided with distributaries.	Area irrigated.	
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
		Miles.	Miles.	Miles.	Acres.	Acres.	Acres.	Acres.		Miles.	Miles.	Miles.	Acres.	Acres.	Acres.	Acres.	
Eastern Sone Division.	Eastern Main	7½	...	9	...	15,402	15,402	2,578	17	7½	...	9	...	15,402	15,402	2,777	
	Patna	79	...	341½	...	360,003	379,737	80,928	23	79	...	341½	...	360,003	379,737	87,701	
		80½	...	350½	...	406,155	395,190	80,506	23	86½	...	350½	...	406,155	395,190	90,478	
Arrah Division.	Arrah	65½	...	208	...	229,433	229,433	75,046	33	65½	...	208	...	229,433	229,433	73,865	
	Dumraon Branch	...	40½	140	...	209,817	209,817	67,123	33	...	40½	140	...	209,817	209,817	67,724	
	Behea Branch	...	31	113	...	179,104	179,104	60,308	34	...	31	113	...	179,104	179,104	60,151	
		65½	71½	470	...	618,354	618,354	203,077	33	65½	71½	472	...	618,354	618,354	2,01,760	
Ditto	Dehri Workshops sub-division, Western Main.	9	...	...	...	...	...	...	...	9	...	...	...	...	...	...
Buxar Division.	Western Main	12½	...	46½	...	89,480	89,480	31,319	15	12½	...	46½	...	89,480	89,480	33,523	
	Gurra Chowbey Branch	...	38	55½	...	173,440	114,522				...	38	55½	...	173,440		114,522
	Buxar	45½	...	196	...	233,600	203,580	109,543	33	45½	...	196	...	233,600	203,580	114,800	
	Chowma Branch	...	39½	111½	...	212,480	184,514				...	39½	111½	...	212,480		184,514
		57½	77½	409	...	709,000	542,096	140,862	26	57½	77½	409	...	709,000	542,096	148,555	
TOTAL SONE CANALS		318½	148½	1,239½	...	1,783,509	1,555,649	453,445	28	318½	148½	1,231½	...	1,783,509	1,555,649	440,798	

The length of the main canals is the same as last year, while there is an increase of 2 miles in distributaries. This increase is due to the construction of the Pitumpur sub-distributary of the Behea Branch Canal in the Arrah Division. There are no changes in the areas commanded and provided with distributaries.

75. The lengths of village channels and the number of outlets in use during the year were as follows:—

VILLAGE
CHANNELS AND
OUTLETS.

DIVISION.	Total length of village channels completed up to end of 1898-99.		Total number of temporary and permanent outlets in use during 1898-99.	Number of permanent outlets.	Number of temporary outlets.
1	2		3	4	5
	M.	Ft.	No.	No.	No.
Eastern Sone ...	529	3,804	1,660	1,065	595
Arrah ...	1,345	2,890	2,495	1,915	580
Buxar ...	1,106	1,587	1,592	672	920
Total, 1898-99 ...	2,981	8,001	5,747	3,652	2,095
Total, 1897-98 ...	2,616	414	6,020	3,634	2,386

During the year the permanent outlets increased from 3,634 to 3,652, and the temporary outlets decreased from 2,386 to 2,095. A total number of 29 permanent outlets was constructed in the Eastern Sone Division, and 17 in the Buxar Division. Many more outlets have been sanctioned for the Buxar Division, the construction of which is in progress. The progress made in the construction of these outlets is not as good as it should be.

As regards village channels made by the villagers themselves, there has been an increase of about 358 miles in length, which may be considered very satisfactory. Progress is also being made in improving the channels, but the Superintending Engineer reports that in order to effect this it has been necessary to bring pressure on the owners by refraining to renew their leases until the improvements are carried out. This is quite right, and the Chief Engineer trusts that the local officers will firmly insist on the improvement of channel as it is by that means that the irrigation is rendered more efficient.

76. The following is a statement of rainfall in the vicinity of the Sone Canals for the last five years:—

RAINFALL.

		AVERAGE OF 22 STATIONS.				
		1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1		2	3	4	5	6
Kharif season	August ...	Inches. 14.81	Inches. 10.41	Inches. 9.69	Inches. 12.32	Inches. 18.32
	September ...	9.50	5.80	2.81	5.40	13.14
	October ...	8.06	0.33	...	5.18	1.05
	Total ...	32.37	16.64	12.50	22.90	32.51
Rabi season	November ...	2.08	...	0.73	...	...
	December ...	0.03	0.14	0.31	...	0.06
	January ...	0.56	0.01	0.03	...	1.64
	February ...	0.61	...	1.08	1.39	0.23
	Total ...	3.28	0.15	2.15	1.39	1.93
	Whole year ...	58.22	36.66	32.05	52.98	54.91

The rainfall of the year was somewhat in excess of the previous one. In the kharif season the excess was considerable. It was, however, not nearly so favourably distributed. There was no large fall in June, so useful for ploughing and early sowing, whilst there was a heavy fall, to which the excess in

the *kharif* season is chiefly due, in September during the "Utra Naichhatra," the period of *nigar* or draining of the rice-fields; this was of little advantage to the crops. The "Hathia" rain, on which the maturing of the rice crop is so largely dependent, entirely failed, and the rain held off till nearly the middle of October; the falls, moreover, after the middle of October, were generally light in the irrigated tracts, and there was, in consequence, a heavy demand for canal-water from the 5th of October. The *rabi* rainfall was a normal one and more favourable for the crops than that of the previous year.

The following table shows the rainfall during the "Hathia Naichhatra" and for the succeeding ten days since 1888; it is based on the 22 stations mentioned in subsidiary Form IVE(a):—

YEAR.	Average rainfall during the "Hathia," 25th September to 8th or 9th of October.	Average rainfall during ten days after the "Hathia."	IN THE SHAHABAD DISTRICT ONLY.	
			Period of maximum demand for water in any period of ten days.	Average daily discharge during that period per 100 acres leased.
1	2	3	4	5
	Inches.	Inches.	October.	C. ft.
1888	0·18	Nil	12th to 21st	2·00
1889	0·02	0·11	6th to 15th	1·93
1890	4·15	0·86	10th to 19th	1·48
1891	1·45	Nil	14th to 23rd	2·04
1892	0·86	Nil	10th to 19th	1·90
1893	3·13	4·39	8th to 17th	1·68
1894	3·97	2·67	15th to 24th	1·31
1895	0·90	Nil	7th to 16th	2·12
1896	Nil	Nil	6th to 15th	1·85
1897	2·42	1·86	25th Sept. to 4th October	1·75
1898	0·01	1·03	5th to 14th October.	1·81

IRRIGATION.

77. The irrigation for ten years, together with the rainfall over 16 stations actually situated on the canal-irrigated area, is show below :—

YEAR.	Kharif.	Rabi.	Perennial.	Total.	Rainfall.
1	2	3	4	5	6
	Acres.	Acres.	Acres.	Acres.	Acres.
1889-90 ...	230,741	55,613	18,928	305,282	49·65
1890-91 ...	211,726	51,318	17,970	281,014	52·23
1891-92 ...	248,819	210,907	14,997	474,723	26·82
1892-93 ...	274,839	126,195	9,727*	410,761	37·69
1893-94 ...	280,528	66,458	19,790*	366,776	46·62
1894-95 ...	258,361	41,664	17,109*	317,134	59·65
1895-96 ...	261,485	115,343	18,394*	395,222	38·36
1896-97 ...	316,941	215,390	22,825*	555,156	30·59
1897-98 ...	299,061	103,371	31,013*	433,445	53·59
1898-99 ...	304,778	110,035	25,983*	440,796	55·74

* Hot-weather crop.

The figures in columns 4 and 5 above and below the black line are not strictly comparable owing to different system of dealing with the hot-weather irrigation.

The total area irrigated was 7,351 acres more than that in the previous year.

78. The following statement gives the areas of each crop irrigated under season and long term (seven and three-year) leases from 1893-94 to 1898-99 under the new rules:—

• IRRIGATION UNDER LEASES.

CROPS.		1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8	9
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Kharif ...	Long-term leases.	254,515	233,756	227,761	244,122	269,234	245,877	278,760
	Season leases	26,013	24,605	33,724	72,819	29,827	37,398	26,018
		280,528	258,361	261,485	316,941	299,061	283,275	304,778
Rabi ...	Long-term leases.	37,231	30,234	31,157	30,709	34,239	32,714	35,567
	Season leases	29,227	11,430	84,186	184,681	69,132	75,731	74,468
		66,458	41,664	115,343	215,390	103,371	108,445	110,035
Hot-weather...	Season leases	19,790	17,109	18,394	22,825	31,013	21,826	25,983
Total ...		366,776	317,134	395,222	555,156	433,445	413,546	440,796
	Total long-term leases.	291,746	263,990	258,918	274,831	303,473	278,591	314,327
	Total season leases.	75,030	53,144	136,304	280,325	129,972	134,955	126,469

Under the new rules for the Sone Canals there are no separate leases for sugarcane: they are included in each season lease.

The total areas irrigated under each form of lease are abstracted as follows for convenient reference:—

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Area irrigated under long-term leases.	291,746	263,990	258,918	274,831	303,473	278,591	314,327
Area irrigated under season leases.	74,292	51,913	120,392	259,323	127,190	126,622	119,337
Area irrigated by sale by volume	57	55	13,856	18,100	1,077	6,629	3,777
" " without permit	681	1,176	2,056	2,902	1,705	1,704	3,355
Total ...	366,776	317,134	395,222	555,156	433,445	413,546	440,796

During the year there was an increase of 10,854 acres in the areas irrigated under long-term leases. The area of *rabi* crops irrigated varies greatly with the season; when there is good rainfall in October the *rabi* area is always small. The *rabi* crop is mainly irrigated under season leases, only a small portion of the area falls within the long-term leases.

Owing to the failure of rain during the *hathia* there was a very heavy demand for canal-water from the 5th of October. This excessive demand was met in a satisfactory manner.

The hot-weather irrigation decreased from 31,013 acres in 1897-98 to 25,983 acres, but though less than last year, it was still above the average of previous years. There is only a small volume of water available for this kind of irrigation, and the area can not be very largely increased.

SUGARCANE.

As sugarcane is the only crop for which canal water is taken during the hot weather, the irrigation during that season may be accepted with accuracy as the area of sugarcane irrigated as one crop. The areas irrigated in the several divisions are given below:—

Eastern Sone	...	...	...	...	Acres.
Arrah	...	...	...	...	3,462
Buxar	...	...	...	...	16,483
					6,038
Total					25,983

DISTRIBUTION
BY SUBDIVISIONS.

The areas irrigated in 1898-99 in each division and subdivision are shown below:—

Eastern Sone Division—				Acres.	Acres.
Daudnagar subdivision	...	...	...	45,492	
Bikram ditto	...	...	...	44,986	
					90,478
Arrah Division—					
Nasriganj subdivision	...	...	...	39,222	
Koath ditto	...	...	...	67,724	
Ramnagar ditto	...	...	...	60,151	
Agiaon ditto	...	...	...	34,633	
					201,760
Buxar Division—					
Sikroul subdivision	...	...	...	80,289	
Jamrore ditto	...	...	...	47,216	
Basawan ditto	...	...	...	21,053	
					148,558
Total				...	440,796

LONG-TERM
LEASES.

Particulars of the long-term leases are given in the following statement:—

DIVISION.	Leases which lapsed on 31st March 1898.	LEASES IN FORCE ON 1st APRIL 1898.		Seven-year leases entered into during 1898-99.	Total area under long-term leases in 1898-99.
		Seven-year leases.	Three-year leases.		
1	2	3	4	5	6
	Acres.	Acres.	Acres.	Acres.	Acres.
Eastern Sone	178	67,782	...	3,859	71,641
Arrah	33	138,460	644	1,303	140,097
Buxar	.....	80,730	...	5,740	86,470
Total	211	286,962	644	10,602	298,208

The leases which lapsed on the 31st March 1898 were all three-year leases: the 644 acres of three-year leases which remained in force on the 1st April 1898 have lapsed on the 31st March 1899. So three-year leases are now extinct. No seven-year leases lapsed on the 31st March 1898, and consequently none were renewed, the 10,602 acres leased during the year are for new blocks.

UNAUTHORISED
IRRIGATION.

79. The assessments for the unauthorized use of water and for wastage were greater than those of the previous year. The figures are:—

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Unauthorized use of water.	4,760	6,910	8,568	13,253	9,576	8,618	23,309
Wastage of water ...	615	682	1,103	2,460	1,196	1,211	3,529

80. The assessments for water sold by "volume" amounted to Rs. 6,044, against Rs. 1,762 in the previous year.

SALE BY
VOLUME.

The approximate area irrigated is given below :—

DIVISION.			Approximate area, 1897-98.	Approximate area, 1898-99.
1			2	3
			Acres.	Acres.
Eastern Sone	...	...	184	417
Arrah	...	...	893	2,842
Buxar	...	...	...	518
Total	...	...	1,077	3,777

This increase of 2,700 acres during the year is due to the smaller rainfall in the *Hathia*.

81. The following statement shows the areas of the several crops actually irrigated in each Division since the year 1892-93, when the new rules came into force :—

IRRIGATION IN
EACH DIVISION.

EASTERN SONE DIVISION.						ARRAH DIVISION.					BUXAR DIVISION.					TOTAL FOR ALL DIVISIONS.				
Long-term leases.	SEASON LEASES.			Total.	Long-term leases.	SEASON LEASES.			Total.	Long-term leases.	SEASON LEASES.			Total.	Long-term leases.	SEASON LEASES.			Total.	
	Kharif.	Rabi.	Hot-weather.			Kharif.	Rabi.	Hot-weather.			Kharif.	Rabi.	Hot-weather.			Kharif.	Rabi.	Hot-weather.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
64,801	7,873	6,067	...	70,661	124,814	14,835	35,990	4,064	180,909	82,351	16,494	46,683	5,063	150,791	271,986	39,202	80,866	9,727	410,769	
67,894	9,123	4,880	2,631	84,428	133,804	7,987	18,064	14,219	174,164	89,958	8,903	6,283	3,040	108,184	291,746	26,013	29,227	19,790	366,771	
68,837	7,359	2,372	2,469	80,837	129,398	7,760	8,318	13,068	158,444	66,025	9,486	740	1,592	77,833	263,990	24,605	11,430	17,109	317,134	
71,273	7,710	6,033	3,610	87,626	127,738	10,313	32,336	12,087	183,474	59,907	16,701	45,617	1,097	124,123	238,918	53,724	84,186	18,394	396,223	
63,120	23,631	19,394	2,193	108,438	142,165	17,394	58,553	15,930	234,028	69,556	21,004	106,834	4,696	212,690	274,631	72,619	184,631	22,835	554,126	
70,923	7,372	7,503	3,808	89,506	148,515	3,636	22,262	18,664	203,077	84,136	18,819	29,367	8,541	140,863	303,473	29,627	69,132	31,013	433,445	
74,080	6,635	5,601	3,462	90,478	146,942	5,579	29,056	16,483	201,700	89,993	12,504	39,721	6,038	148,668	314,327	26,018	74,468	25,993	440,796	

82. The following table gives the duties obtained during the *kharif* and *rabi* seasons on the several canals for the last three years :—

DUTY OF
WATER.

			1896-97.		1897-98.		1898-99.	
			Acres.	Duty.	Acres.	Duty.	Acres.	Duty.
1	2	3	4	5	6	7	8	9
Eastern Main Series	82,866	53-97	72,802	61-75	75,490	62-08
Arrah Canal System	141,569	64-35	133,053	82-79	136,794	75-66
Buxar Canal System	93,006	64-05	93,206	86-70	92,494	77-73
Western Main Series	294,575	63-88	226,259	83-52	229,288	76-04
Sone Canals	316,941	60-64	299,061	76-92	304,778	72-03

But these duties are of no practical value, as the real duty of the water is that of the maximum period of demand in October.

Rabi.

1	1896-97.		1897-98.		1898-99.	
	2	3	4	5	6	7
	Acres.	Duty.	Acres.	Duty.	Acres.	Duty.
Eastern Main Series ...	23,879	64.19	12,896	54.64	11,526	48.63
Arrah Canal System ...	76,523	87.26	51,360	78.65	48,483	98.06
Buxar Canal System ...	114,988	125.40	89,115	74.93	50,026	75.45
Western Main Series ...	191,511	106.75	90,475	77.00	98,509	83.20
Sone Canals ...	215,390	99.44	103,371	73.31	110,035	77.44

The Superintending Engineer writes:—

"On the assumption that the whole *kharif* area was irrigated during the ten days of maximum demand in October, the duty works out to 55 acres per cubic foot of discharge in the Main Western Canal. This, though higher than in 1896-97, may be attributed to the greater moisture in the soil in the year under review owing to the very heavy rain in the early part of September. On the Main Eastern Canal the duty is given by the Executive Engineer as 53 acres nearly. The *kharif* season duty is vitiated by the running of the flushes to clear silt. A slightly better duty was obtained during the *rabi* season.

"The Executive Engineer of the Arrah Division repeats the table, which has now been given for some years, showing the aggregate depth of water placed on the rice-fields, on the hypothesis that the entire 'utilized' discharge of the canal reached the fields. The figures take cognizance of the months July to October inclusive, thus:—

YEAR.	AGGREGATE DEPTH. DUE TO—		Total.
	Rainfall.	Canal water.	
1	2	3	4
	Feet.	Feet.	Feet.
1887-88 ...	2.56	2.60	5.16
1888-89 ...	3.47	2.93	6.40
1889-90 ...	2.81	2.62	5.43
1890-91 ...	3.36	2.42	5.78
1891-92 ...	1.60	3.75	5.35
1892-93 ...	2.37	3.04	5.41
1893-94 ...	2.89	2.14	5.03
1894-95 ...	3.59	2.09	5.68
1895-96 ...	2.33	3.02	5.35
1896-97 ...	1.56	3.22	4.78
1897-98 ...	3.29	2.37	5.66
1898-99 ...	3.94	2.31	6.25

The total area irrigated on the distributaries during the year and the duty of water on them are shown in the subjoined abstract statement. The detail of each distributary is given in Appendix II.

The season duty as given in the tables is of little practical use so far as the *kharif* irrigation is concerned, as its limitation is the duty obtainable during the "Hathia." A comparison made by the Executive Engineer, Arrah Division, for a number of distributaries in the Koath subdivision shows the "Hathia" or effective duty to be on an average one-third of the season duty. Some experiments were made on the loss of water in distributaries in the Eastern Sone and

SUPPLEMENT TO THE CALCUTTA GAZETTE, NOVEMBER 22, 1899. 2089

Arrah Divisions. The loss per cent. per mile varies from about 1 to 3·5 cubic feet according to the nature of the soil through which the distributaries run :—

DISTRIBUTARY.	AREAS IRRIGATED IN ACRES.				MEAN DUTY IN ACRES PER CUBIC FOOT OF DISCHARGE.			REMARKS.
	Kharif.	Rabi.	Hot-weather.	Total.	Kharif.	Rabi.	Hot-weather.	
1	2	3	4	5	6	7	8	9
<i>Eastern Sone Division.</i>								
Tributaries on the Eastern Main Canal	2,393	204	95	2,692	100	19	24	
Tributaries on the Patna Canal (Daudnagar subdivision).	36,528	5,496	775	42,799	75	54	9	
Ditto ditto (Bikram subdivision).	36,571	5,823	2,592	44,986	67	39	21	
Total Patna Canal ...	73,099	11,319	3,367	87,785	71	46	15	
Total Eastern Sone Division ...	75,492	11,523	3,462	90,477	...	...	...
<i>Arrah Division.</i>								
Tributaries on the Arrah Canal (Nasirganj subdivision).	27,252	8,964	3,006	39,222	96	60	48	
Ditto ditto (Agiaon subdivision).	28,118	4,254	2,291	34,663	107	42	40	
Total Arrah Canal ...	55,366	13,218	5,297	73,880	102	51	44	
Tributaries on the Dumraon Branch Canal (Kotha subdivision).	42,543	19,006	6,008	67,557	76	62	29	
Ditto on the Bihia Branch Canal (Ramnagar subdivision).	38,886	16,174	5,129	60,189	72	71	16	
Total Arrah Division ...	1,38,794	48,398	16,434	2,01,626	...	...	...
<i>Buxar Division.</i>								
Tributaries on the Main Western Canal (Sikroul subdivision).	5,525	2,377	629	9,081	80	76	50	
Ditto ditto (Jamour subdivision).	2,115	884	195	3,194	157	145	42	
Ditto ditto (Basawan subdivision).	2,761	2,416	52	5,229	180	129	...	
Total Main Western Canal ...	10,401	6,177	876	17,454	122	117	46	
Tributaries on the Buxar Canal	43,995	23,684	4,180	71,859	68	78	18	
Ditto Chowwa Branch Canal (Jamour subdivision).	29,749	13,290	982	44,021	149	118	44	
Ditto Garra Chowwa Branch Canal (Basawan subdivision).	8,949	6,875	...	15,824	96	118	...	
Total Buxar Division ...	92,494	50,026	6,038	148,558	...	...	...
Total Sone Canals ...	304,780	109,947	25,934	440,661	...	...	...

CROP EXPERI-
MENTS.

83. *Crop experiments.*—The results of the experiments made during the year to determine the yield of rice and wheat crops irrigated from the canal are given in the following tables:—

TABLE I.—RICE.

Result of experiments on "good" rice crops irrigated with canal water for the year 1898-99.

DIVISION.	Number of experiments.	AVERAGE YIELD PER ACRE WEIGHED DRY.			
		Grain.		Straw.	
		Maunds.	Seers.	Maunds.	Seers.
1	2	3	4	5	6
Eastern Sone ...	4	32	22	49	23
Arrah ...	10	30	9	43	21
Buxar ...	6	28	9	50	29
Sone Circle average ...	20	30	4	46	35

N.B.—A good crop means a crop decidedly above the ordinary crop in the village in which it was taken.

TABLE II.—RICE.

Result of experiments on "average" rice crops irrigated with canal water for the year 1898-99.

Eastern Sone ...	20	23	28	36	15
Arrah ...	50	21	16	35	...
Buxar ...	31	22	3	30	26
Sone Circle average ...	101	22	3	33	38

N.B.—An "average" crop means a crop that was considered a fair average of the whole crop in any village in which an experiment was made.

TABLE III.—RICE.

Result of experiments on "good" rice crops irrigated without canal water for the year 1898-99.

Eastern Sone ...	2	21	10	43	24
Arrah ...	14	25	27	43	1
Buxar ...	1	22	...	39	...
Sone Circle average ...	17	24	38	42	34

TABLE IV.—RICE.

Result of experiments on "average" crops irrigated without canal water for the year 1898-99.

Eastern Sone ...	22	21	19	34	14
Arrah ...	29	17	15	33	16
Buxar ...	31	14	33	22	28
Sone Circle average ...	82	17	21	29	25

The difference between Table I and Table III shows 5 maunds 6 seers of grain per acre in favour of the canal-irrigated lands. In the previous year, when there was better rainfall in October, the similar difference was only 1 maund 7 seers. The Superintending Engineer is of opinion that this

difference illustrates the fact that the crops which are matured without canal-water suffer much more in a comparatively dry October than crops irrigated from the canals.

The following tables deal with *rabi* crops. The results indicate little or no difference between the yield of crops irrigated from canal water and those otherwise raised:—

TABLE I.—RABI.

Result of experiments on "good" rabi crops irrigated with canal water for the year 1898-99.

DIVISION.	Staple.	Number of experiments made.	IRRIGATED WITH CANAL WATER.			
			AVERAGE YIELD PER ACRE.			
			Grain.		Straw.	
			Maunds.	Seers.	Maunds.	Seers.
1	2	3	4	5	6	7
Eastern Sone ...	Wheat	...	...	...	...	...
Arrah ...	"	8	20	26	30	10
Buxar ...	"	2	15	23	15	30
Sone Circle average ...	...	10	19	25	27	14

TABLE II.—RABI.

Result of experiments on "average" rabi crops irrigated with canal water for the year 1898-99.

Eastern Sone ...	Wheat	9	14	16	18	28
Arrah ...	"	24	17	1	20	39
Buxar ...	"	19	10	31	11	17
Sone Circle average ...	...	52	14	11	17	4

TABLE IA.—RABI.

Result of experiments on "good" rabi crops irrigated without canal water for the year 1898-99.

DIVISION.	Staple.	Number of experiments made.	IRRIGATED WITHOUT CANAL WATER.			
			AVERAGE YIELD PER ACRE.			
			Grain.		Straw.	
			Maunds.	Seers.	Maunds.	Seers.
1	2	3	4	5	6	7
Eastern Sone ...	Wheat	4	19	26	21	29
Arrah ...	"	10	18	5	20	34
Buxar ...	"	2	10	14	8	36
Sone Circle average ...	...	16	17	21	19	23

TABLE IIA.—RABI.

Result of experiments on "average" rabi crops irrigated without canal-water for the year 1898-99.

DIVISION.	Staple.	IRRIGATED WITHOUT CANAL WATER.				
		Number of experiments made.	AVERAGE YIELD PER ACRE.			
			Grain.		Straw.	
			Maunds.	Seers.	Maunds.	Seers.
1	2	3	4	5	6	7
Eastern Sone ...	Wheat	5	13	39	22	18
Arrah ...	"	10	15	21	21	21
Buxar ...	"	14	9	33	10	16
Sone Circle average ...	...	29	12	20	16	13

DEMANDS,
COLLECTIONS
AND BALANCES.

84. The demands, collections, and balances of water-rates for the last five years are shown below:—

YEAR.	Amount outstanding at commencement of year.	Amount falling due for recovery during the year.	Total for recovery.	Cash realisation.	Remitted or written off.	Balance at the end of the year.
1	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1894-95 ...	1,01,858	6,88,905	7,88,763	7,43,868	4,091	40,809
1895-96 ...	40,809	6,66,246	6,97,055	6,69,045	5,017	22,998
1896-97 ...	22,998	9,60,866	9,78,869	9,68,928	5,506	9,428
1897-98 ...	9,428	11,38,956	11,47,784	11,42,244	4,065	1,475
1898-99 ...	1,475	9,80,604	9,81,979	9,29,016	2,968	...

ARREARS.

85. The following statement shows the extent to which the arrears as well as the current demand have been worked off:—

	Demand of 1898-99, consisting of—	Collected or remitted in 1898-99.	Percentage of demand adjusted.	Unadjusted balance at close of year.
1	2	3	4	5
	Rs.	Rs.		Rs.
Arrears outstanding on 1st April 1898 ...	1,475	1,475	100	...
Current demand for 1898-99 ...	9,28,088	9,28,088	100	...
Total ...	9,29,563	9,29,563	100	...

The fact that the entire outstanding demand of the previous year and the current demand of the year itself have been adjusted in full is exceedingly satisfactory. The results are highly creditable to the Deputy Collector, Moulvi Syed Mahomed Nasiruddin, and his staff.

SUPPLEMENT TO THE CALCUTTA GAZETTE, NOVEMBER 22, 1899. 2093

86. The following statement gives the collections in each district:—

COLLECTION.

DISTRICT.	DEMAND.			ADJUSTMENTS.				Balance on 31st March 1899.	Percentage, column 8 on column 4.
	Arrears on 31st March 1898.	Current demand for 1898-99.	Total.	Collection.	Remission made by canal officers.	Written off as irrecoverable.	Total.		
1	2	3	4	5	6	7	8	9	10
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Shahabad	1,480	7,86,724	7,88,174	7,85,382	2,404	388	7,88,174	NH	100
Patna	25	88,118	88,136	88,084	7	...	88,138	NH	100
Gaya ... ..	...	1,03,251	1,03,251	1,03,154	97	...	1,03,251	NH	100
Total	1,475	9,28,093	9,29,563	9,26,600	2,575	388	9,29,563	NH	100

Besides the collections of water-rates amounting to Rs. 9,26,600 shown above, a further sum of Rs. 2,776 was collected as miscellaneous revenue by the Canal Revenue Department and credited to water-rate accounts.

87. The sums remitted in 1898-99 and previous five years, according to the figures supplied by the Superintending Engineer, were:—

REMISSIONS.

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
i. Written off by Civil officers as irrecoverable.	3,226	2,665	3,811	716	722	2,226	388
ii. Remissions granted by Executive Engineers, including refunds.	2,180	2,640	2,430	8,529	10,050	5,166	2,992
iii. Extraordinary remissions by Superintending Engineers.	...	189	298	730	428	329	701
iv. Remitted on revised and cancelled khatians.	15,251	8,370	3,574	4,527	2,250	6,794	1,520
Total	20,657	13,864	10,113	14,502	13,450	14,517	5,601
Number of certificates issued during the year.	2,219	2,019	1,253	1,036	774	1,460	376

There was considerable improvement during the year in all items connected with the refund or remission of water-rates. The total amount remitted was Rs. 5,601, against Rs. 13,450, in the previous year and Rs. 14,517 in the average of the previous five years. The heading ii includes both remissions and refunds; the remissions are, in most cases, the correction of wrong assessments made before the demands have been collected; the refunds are mostly similar assessments which have been collected and have to be refunded in cash. It is these last which give the most trouble, both to the people, who pay improperly, and to the collecting staff which has to collect and then to refund. It is satisfactory to notice that these refunds which were Rs. 7,136 in 1897-98 were only Rs. 1,118 in 1898-99, indicating that a larger proportion of remission papers reached the Deputy Collector before the rates were collected. Of the extraordinary remissions of Rs. 701, the amount remitted by the Superintending Engineer was Rs. 81 only, and the balance, Rs. 620, was written off as unsettled balance outstanding for three years, which could not be vouched for by actual receipts pending in the hands of the collecting officers. But the most satisfactory feature of all is the marked reduction of the numbers of certificates issued. During the previous five years the average number was 1,460, but in the year

under review the entire sum has been collected with only 376 certificates. This fact indicates that the people are contented and pay their water-rates willingly.

The following table gives the details of the remissions (including refunds) made by Executive Engineers by Divisions :—

Class.	Causes.	Eastern Sone Division.	Arrah Division.	Buxar Division.	Total 1898-99.	Total 1897-98.
1	2	3	4	5	6	7
		Rs.	Rs.	Rs.	Rs.	Rs.
a	Charge by mistake for land cultivated by others ...	...	...	...	...	...
b	Excess measurement or errors in calculation ...	25	395	223	643	1,508
c	Lift charged as flow ...	8	15	20	43	313
d	Irrigation not denied, but remitted as not chargeable under the Act	2	17	25	44	68
e	Land not having been irrigated at all ...	67	119	188	374	1,083
f	Injury to crop due to insufficient supply ...	...	38	30	68	1,711
g	Land thrown temporarily out of cultivation (applicable to long leases only) ...	24	11	69	104	8
h	Failure of crop originally shown, Rule 82 ...	72	753	763	1,588	5,040
i	Land appropriated for other purposes than cultivation ...	6	2	23	31	29
j	Double assessment, as when land assessed on a season lease is subsequently included in a long lease in the same year ...	8	33	56	97	290
	Total ...	212	1,388	1,397	2,992	10,050*

The totals for the last six years are given below :—

1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2,180	2,640	2,430	8,529	10,050	5,166	2,992

More than half the amount remitted during the year by Executive Engineers was on account of failure of crops, for which a reduced rate was levied. It occurred chiefly in the hot-weather season.

The percentage of remissions on the gross demand was as follows in each Division :—

		Percentage of remissions to gross demand.	
		1897-98.	1898-99.
Eastern Sone Division ...	...	0.17	0.08
Arrah ditto ...	...	0.26	0.22
Buxar ditto ...	...	0.27	0.25

88. The following statement shows the cost of the revenue establishment for the last five years :—

REVENUE
ESTABLISH-
MENT.

PARTICULARS.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
<i>Establishment under Collector.</i>					
	Rs.	Rs.	Rs.	Rs.	Rs.
1. Permanent establishment, including travelling allowances ...	54,311	55,466	62,633	66,259	65,370
2. Temporary establishment ...	3,217	3,960	3,030	5,563	4,374
3. Contingencies ...	5,596	4,248	6,053	6,048	4,783
4. Headmen's fees ...	8,309	9,431	99	...	...
5. Fees to patwaris ...	114	...	...	...	...
6. Fees to contractors of long-term leases ...	...	2,485	2,674	2,643	2,562
Total establishment under Collector ...	71,547	75,590	74,489	80,503	77,089
<i>Establishment under Superintending and Executive Engineers.</i>					
Permanent and temporary establishment, including travelling allowances ...	45,335	46,703	51,357	50,085	46,175
Contingencies ...	3,936	2,745	4,240	5,494	4,786
Water-regulation establishment ...	2,246	2,270	2,357	2,573	2,313
Headmen's fees ...	23,896	15,003	18,087	24,203	22,326
Total establishment under Executive Engineers.	75,413	66,721	76,041	82,355	75,603
Total ...	1,46,960	1,42,311	1,50,530	1,62,858	1,52,692
Collections of water-rates and miscellaneous revenue by the Canal Revenue Department ...	7,45,691	6,79,702	9,59,350	11,43,593	9,29,376
Percentage ...	19.7	20.9	15.6	14.2	16.4

There was a total reduction of Rs. 10,166 in the cost of establishment on account of the less demand for the year. The reduction took place under all heads. The decrease under permanent and temporary establishments, including travelling allowances and contingencies, was chiefly due to grain allowances being stopped, to a smaller number of substitutes being employed in place of men on leave, to a reduction in the number of the temporary establishment and to the reduction in headmen's fees which followed the reduction in demand. The Chief Engineer believes that a reduction is still possible in the establishment under the Deputy Collector, and trusts that the Superintending Engineer will see if it cannot be effected.

89. The total cost of the revenue establishment under each Executive Engineer, per acre irrigated, is shown below :—

COST PER
ACRE.

DIVISION.	1898-99.			1897-98.
	Revenue* establish- ment.	Area irrigated.	Cost per acre.	Cost per acre.
1	2	3	4	5
	Rs.	Acres.	A. P.	A. P.
Eastern Sone ...	17,933	90,478	3 2	3 3
Arrah ...	31,081	201,760	2 6	2 7
Buxar ...	26,588	148,558	2 10	3 6
Total Sone Canals ...	75,602	440,796	2 9	3 0

* Includes proportion of water-regulation establishment employed on the head-works.

COMPLAINTS.

90. The following statement gives particulars of the disposal of complaints. Claims for ordinary remission are distinguished from other complaints, such as petitions alleging damage from the canals, complaints against individuals, and other miscellaneous claims. The totals are compared with those of the two previous years:—

DIVISION.	CLAIMS FOR ORDINARY REMISSION—				OTHER COMPLAINTS—			Total complaints received during the year, excluding those pending from previous year.	Pending.
	Received during the year and pending from previous year.	Disposed of—		Pending.	Received during the year and pending from last year.	Disposed of.	Pending.		
		Remission allowed.	Remission refused.						
1	2	3	4	5	6	7	8	9	10
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Eastern Sone ...	187	99	82	6	92	91	1	270	7
Arrah ...	1,643	748	743	76	1,008	1,063	18	2,073	89
Buxar ...	1,302	463	783	56	500	406	7	1,525	93
Total, 1896-99 ...	3,051	1,306	1,608	138	1,600	1,639	21	4,571	159
Total, 1897-98 ...	4,251	1,806	2,224	221	2,140	2,021	119	5,351	340
Total, 1896-97 ...	8,023	3,303	4,780	345	588	393	195	9,005	1,040

The reduction in the number of complaints pending at the close of the year from 340 to 159 is satisfactory. There has been a marked improvement in the Buxar Division, but the large figures in 1896-97 were due to the heavy demand for *rabi* irrigation in that year.

APPEALS.

91. The following statement shows the number of appeals to the Collectors of districts against Executive Engineers' decisions on a total of 4,552 cases of complaints and how they were disposed of:—

DIVISION.	NUMBER OF APPEALS—		Appeals allowed.	Appeals discharged.	Pending.
	Pending from last year.	Instituted during the year.			
1	2	3	4	5	6
	No.	No.	No.	No.	No.
Eastern Sone ...	...	...	...	...	...
Arrah ...	1	6	2	4	1
Buxar ...	...	2	...	2	...
Total ...	1	8	2	6	1

Of the appeal cases, two were against assessment for unauthorised irrigation rates. Of these two, one only was modified.

CASES UNDER
ACT III (B.C.)
OF 1876.

92. Thirty-seven cases were tried by Executive Engineers vested with magisterial powers under the Act. Forty-four persons accused were convicted, and 19 discharged. The fines imposed amounted to Rs. 180. Of the 37 cases, 35 were instituted in the Bikrum subdivision, the result being 20 convictions and 15 acquittals. They were principally for neglecting to prevent wastage of water from village channels, interference with supply and obstructing flow, under section 93 of the Irrigation Act. Only one case was tried under section 16 of the Navigation Act V of 1864.

93. The usual comparative statement of certificate cases instituted during 1897-98 and 1898-99 against defaulters for failing to pay water-rates, in the districts of Shahabad, Patna, and Gaya, is given below:—

CERTIFICATE
CASES.

	SHAHABAD.				PATNA.				GAYA.				TOTAL.				
	1897-98.		1898-99.		1897-98.		1898-99.		1897-98.		1898-99.		1897-98.		1898-99.		
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.	
cases pending at the close of the pre- ceding year.	8	717	8	361	...	...	...	...	...	...	...	...	8	717	8	361	
cases instituted during the year ...	738	10,038	367	6,171	25	260	8	118	11	71	1	1	774	10,369	376	6,290	
Total ...	746	10,755	375	6,532	25	260	8	118	11	71	1	1	782	11,086	379	6,651	
cases disposed of— being struck off, owing to the de- mand having been remitted and cancelled.	9	147	8	314	...	...	...	...	...	...	...	...	9	147	8	314	
being wholly satisfied ...	734	10,247	362	6,218	25	260	8	118	11	71	1	1	770	10,678	371	6,337	
Total ...	743	10,394	370	6,532	25	260	8	118	11	71	1	1	779	10,725	379	6,651	
cases outstanding at close of the year ...	3	361	...	...	...	...	...	...	...	...	...	...	3	361	Nil	Nil	

94. The navigation receipts for the last five years are shown in the statement below:—

NAVIGATION.

NAVIGATION RECEIPTS.

YEAR.	EASTERN MAIN SERIES.			WESTERN MAIN SERIES.			Total.	Total tollage only.
	Number of miles open.	Tollage receipts.	Transport service receipts.	Number of miles open.	Tollage receipts.	Transport service receipts.		
1	2	3	4	5	6	7	8	9
	No.	Rs.		No.	Rs.	Rs.	Rs.	Rs.
1894-95 ...	86½	19,787	...	132½	29,582	9,550*	58,899	49,349
1895-96 ...	86½	22,082	...	132½	29,288	9,891*	61,261	51,370
1896-97 ...	86½	21,249	...	132½	36,196	13,561*	70,006	66,445
1897-98 ...	86½	22,687	...	132½	42,355	23,384*	88,426	66,042
1898-99 ...	88½	37,394	...	132½	55,657	12,512*	1,06,563	93,051

* There is no longer any Government transport service. These receipts are on account of hire of steamers, boats and sundries.

The receipts show an increase of Rs. 17,137 compared with the previous year, and are the largest on record since the opening of the canals for traffic. The increase is mainly due to the transport of coal and building materials to Dehri for the Mogulserai-Gaya Railway. This traffic will now soon cease. There was also a large export in oil seeds, food-grains, timber and bamboos, which contributed partly to the increase.

TOLLAGE (ASSESSED).

TOLLAGE.

YEAR.	Patna Canal system.	Arrah Canal system.	Buxar Canal system.	Total.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1894-95 ...	19,663	19,837	9,890	49,390
1895-96 ...	21,892	17,861	11,273	51,026
1896-97 ...	20,476	28,106	9,544	58,125
1897-98 ...	22,750	31,790	9,505	64,045
1898-99 ...	37,295	44,391	10,889	92,575

TRAFFIC.

COMPARISON OF TRAFFIC.

	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
Number of miles open ... No.	218½	216½	218½	218½	218½
Toll collections ... Rs.	49,319	51,370	56,445	65,042	93,051
Collections per mile ... "	225	236	258	297	426
Boats, including empties ... No.	6,119	5,838	6,944	9,070	10,066
Tonnage of boats ... Tons	85,573	78,441	105,565	130,216	1,63,846
Estimated value of cargo, including rafts ... Rs.	49,20,464	50,04,985	57,37,241	65,65,729	75,70,815

STEAMER SERVICE.

95. The steamer service on the canals continued to be worked by Messrs. Radford and Company.

The following table shows the extent of the steamer traffic worked by them :—

PARTICULARS.	Patna Canal.	Arrah Canal.	Buxar Canal.	Total.
1	2	3	4	5
Passengers carried { Up No.	4,165½	11,863½	6,133	22,162
Down "	4,017	13,435½	6,315	23,767½
Cargo carried ... { Up Tons	1,129	887	520	2,536
Down "	1,249	829	889	2,967

During the year the traffic on the Buxar Canal, which had fallen off in last year, revived to some extent. On the Patna and Arrah Canals it remained steady.

On the Patna Canal the steamer makes one trip a week each way. On the Arrah and Buxar Canals there is a service twice in the week. The receipts from the transport service on account of the hire of accommodation boats, mud punts, and jolly boats was Rs. 12,512, as compared with Rs. 17,354 in the previous year.

The four steamers and 42 of the mud punts, having been sold, and the railway works for the conveyance of the materials for which mud punts were hired by Messrs. Bird and Company nearing completion, the receipts under this head in future years will be insignificant.

MISCELLANEOUS RECEIPTS.

96. The details of the miscellaneous receipts for the last five years are given below :—

PARTICULARS.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sale of water ...	730	867	847	1,280	541	763	1,647
Plantations ...	1,164	1,671	3,239	2,958	1,714	2,149	2,883
Other canal produce ...	1,651	2,793	1,605	1,027	821	1,579	1,466
Water-power ...	978	1,715	1,780	1,347	1,015	1,247	1,031
Rent of buildings ...	8,921	8,287	8,008	9,354	8,506	8,623	8,597
Fines ...	20	456	218	208	144	209	166
Miscellaneous { Rent of lands ...	9,014	12,772	13,279	13,030	17,784	13,176	23,397
{ Fisheries ...	697	582	553	342	477	50	479
{ Cost of process ...	2,528	2,432	1,893	1,639	1,144	1,907	326
{ Sale of old materials ...	139	11	8	279	156	119	63
{ Other items ...	3,736	4,054	2,758	5,597	4,002	4,080	810
Total ...	29,578	35,620	33,148	36,961	36,304	34,322	40,685

The increase in land rents is satisfactory. The matter is receiving the attention of the Superintending Engineer, and the receipts under this head should continue to increase gradually.

97. The number of trees, classified according to size, in the plantations on the canals in each division, compared with the previous year, is shown below :—

DIVISION.	1897-98.				1898-99.				Increase.	Decrease.
	Trees over 12 feet in height.	Saplings between 4 and 12 feet.	Seedlings under 4 feet.	Total.	Trees over 12 feet in height.	Saplings between 4 and 12 feet.	Seedlings under 4 feet.	Total.		
1	2	3	4	5	6	7	8	9	10	11
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Eastern Sone	100,914	39,440	30,833	151,307	96,604	33,768	33,002	155,219	3,912	...
Arrah	64,200	10,354	16,424	83,578	64,223	13,622	20,785	98,530	4,952	...
Dehri Workshop Subdivision	40,665	6,536	3,465	50,596	41,401	13,643	7,330	61,783	5,197	...
Buxar	37,255	8,791	10,009	46,054	27,636	8,913	10,445	46,994	940	...
Total	240,934	65,741	60,880	347,555	231,764	58,831	72,531	363,126	15,001	...

There was an increase of 15,001 trees during the year. The increase took place in all divisions.

The financial results of the tree plantations for the last two years are expressed in the following table :—

DIVISION.	RECEIPTS.		EXPENDITURE.	
	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
Eastern Sone	922	1,133	1,048	999
Arrah	469	822	1,757	706
Dehri Workshop Subdivision.	250	771	1,556	1,693
Buxar	73	157	1,057	1,027
Total	1,714	2,883	5,418	4,425

The receipts are Rs. 1,169 more, and the expenditure Rs. 993 less, than in the previous year. A number of trees died, especially in the Arrah Division, which were cut down, sold, and credited to "Plantations."

98. The floods in the Sone during the year were of less maximum height than those of 1897, but were more uniformly continuous, and necessitated more frequent closures of the canals. The highest level at the Dehri weir was 1·10 feet lower than the highest level in 1897-98, and that at the Barun weir 1·50 feet as is shown in the statement below :—

RIVER SONE.

LOCALITY.	1897-98—21st August 1897.		1898-99—15th August 1898.		Highest known, 1876-77—7th July 1876.	
	Above weir.	Below weir.	Above weir.	Below weir.	Above weir.	Below weir.
1	2	3	4	5	6	7
	R. L.	R. L.	R. L.	R. L.	R. L.	R. L.
Dehri	338·85	337·80	337·75	336·70	342·10	341·00
Barun	340·90	339·00	339·40	337·40	343·50	342·70

The highest flood readings recorded in this circle for the river Ganges in 1898-99 were:—

River Ganges.

LOCALITY.	Date.	Reading.	Highest known since 1875.	
			Date.	Reading.
1	2	3	4	5
Duxar	1st September 1898	R. L. 200.47	6th August 1875	R. L. 200.71
Beegah	1st " "	168.44	14th " 1879	169.58
Hajipur, confluence of rivers Ganges and Gandak.	2nd " "	164.80	14th " "	166.20

MAINTENANCE
CHARGES AND
REPAIRS.

99. The expenditure on maintenance and repairs, by main sub-heads, for the last five years is shown below:—

PARTICULARS.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Head works	27,297	29,618	21,077	24,188	23,202	26,077	34.36
Main canal, including branches ...	1,89,160	1,48,428	76,673	83,880	74,593	1,14,327	67.90
Distributaries	46,117	37,802	33,101	42,865	38,181	39,681	52.32
Drainage and protective works ...	80.4	4,379	2,283	782	4,039	2,899	2.51
Cost of working transport service ...	...	...	...	...	...	...	...
Compensation ... ..	...	...	23	2	...	5	1
Total	2,65,928	2,20,227	1,32,067	1,51,717	1,40,016	1,81,989	1,57,194

REPAIRS TO
HEAD WORKS.

100. The cost of repairs to head works during the last five years was—

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Weir on Sone river	18,262	22,426	13,922	16,542	15,352	17,301	25,850
Other head works	8,301	5,696	6,344	7,432	7,782	7,111	7,996
Total	26,563	28,122	20,266	23,974	23,134	24,412	33,836

MAINTENANCE
OF MAIN
CANALS AND
DISTRIBUTARIES.

101. The following table details the expenditure on maintenance and repairs in each division for the last three years:—

	ARRAH DIVISION.			BUXAR DIVISION.			EASTERN SONE DIVISION.			TOTAL.		
	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Western Main Canal	15,494	10,002	10,090	3,216	2,687	3,990	...	...	...	18,710	12,689	14,471
Eastern ditto ... ..	...	...	...	...	...	...	4,731	2,209	5,128	4,731	2,209	4,731
Canals	18,663	19,787	18,855	10,415	8,596	11,712	13,189	13,848	18,816	42,267	42,231	49,494
Branch Canals	8,398	9,182	11,835	9,996	8,361	8,064	...	...	...	18,389	17,539	19,471
Distributaries	17,901	17,021	12,834	14,761	12,424	10,971	10,200	8,737	8,517	42,862	38,192	32,852
Drainage and protective works ...	120	3,556	1,185	306	109	620	355	374	710	781	4,039	2,899
Total	60,571	59,548	54,799	38,694	32,167	35,357	28,475	25,168	33,171	1,27,740*	1,16,833†	1,27,740‡

* Exclusive of Rs. 23,974, Rs. 2 and Rs. 5,048 expended on maintenance and repairs of Sone weir and head works, compensation and refunds, respectively.

† Exclusive of Rs. 23,134 and Rs. 12,184 expended on maintenance and repairs of the Sone weir and head works and refunds, respectively.

‡ Exclusive of Rs. 33,852, Rs. 14 and Rs. 3,823 expended on maintenance and repairs of the Sone weir and head works, compensation and refunds, respectively.

SUPPLEMENT TO THE CALCUTTA GAZETTE, NOVEMBER 22, 1899. 2101

The expenditure on "Maintenance and Repairs" during the year shows a small increase of Rs. 6,444.

102. The following table gives particulars of dredging operations during the year, compared with the results of the two previous years:—

SILT-CLEARING
AND
DREDGING.

CANALS.	1896-97.			1897-98.			1898-99.		
	Quantity dredged.	Cost, including removal over spoil bank, or discharge into river.	Rate per 1,000 cubic feet.	Quantity dredged.	Cost, including removal over spoil bank, or discharge into river.	Rate per 1,000 cubic feet.	Quantity dredged.	Cost, including removal over spoil bank, or discharge into river.	Rate per 1,000 cubic feet.
1	2	3	4	5	6	7	8	9	10
	C. ft.	Rs.	Rs. A. P.	C. ft.	Rs.	Rs. A. P.	C. ft.	Rs.	Rs. A. P.
Eastern Main and Patna Canals	445,649	2,759	6 3 0	692,336	3,179	4 9 0	677,857	3,188	4 11 0
Western Main Canal (head to regulator).	34,716	67	1 14 0	221,061	420	1 14 4	151,520	361	2 6 1
Western Main Canal (regulator to 9th mile).	...	...	...	29,770	137	4 9 6	25,086	121	4 13 3
River Sone	3,244,365	5,079	1 9 0	1,017,135	1,463	1 7 0	1,406,985	2,292	1 10 0
Head Lock	31,156	98	3 2 4	58,881	251	4 4 2	31,777	143	4 8 0
Total Main Western Canal	3,810,237	5,244	1 9 4	1,826,867	2,271	1 11 4	1,617,268	2,917	1 12 9

The rates given above include the cost of lifting the silt into barges, and carrying it over the spoil banks or discharging it into the river.

The increase in the quantity dredged in the river Sone was due to the sand banks in the river having advanced towards the weir, so that a deeper channel than usual had to be cut before cross traffic could be established. The extra rate in dredging was due to a large quantity of belting having to be replaced on all the dredgers.

103. The expenditure on repairs to dredgers is shown below for the last five years:—

REPAIRS TO
DREDGERS.

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Fouracres' dredgers	6,467*	6,036*	3,254*	1,846*	2,110*	3,943	1,795†
Bruce's ditto	627	362	114	97	218	284	29
English ditto	3,575	2,724	560	188	239	1,457	91
Mud punts	3,075	2,508	1,242	724	1,252	1,760	6
Total	13,744	11,630	5,170	2,855	3,819	7,444	1,921

* Cost of repairs to 12 Fouracres' dredgers.
† Ditto to 9 ditto.

The reduction in the cost of maintenance of the dredgers is thus explained by Superintending Engineer:—

"During the year the English and Bruce's dredgers had little done to them: hence the small expenditure shown against them. There being only nine Fouracres' dredgers now, three having been dismantled, the cost of repairs for them is less. To the heavy expenditure last year on repairs to mud punts and the agreement with Messrs. Bird and Company, to whom they were hired, that any damage done was to be made good at their expense, the very small amount expended on them this year is due."

The capital cost of the dredging plant now on the Sone Canals is given below:—

	Two English dredgers.	Two old Bruce's dredgers	Nine Fouracres' dredgers.	Two new Bruce's dredgers.	Mud punts.	Total.
1	2	3	4	5	6	7
Capital cost as shown in the Revenue Report of 1897-98 ...	Rs. 1,21,205	Rs. 33,027	Rs. 80,176	Rs. 547	Rs. 3,12,863	Rs. 5,47,818
Capital expenditure during 1898-99 ...	...	...	...	...	(-)32,000	(-)32,000
Total capital cost of plant at end of 1898-99 ...	1,21,205	33,027	80,176	547	2,80,863	5,15,818

The reduction in capital cost is due to the credit of Rs. 32,000 during the year on account of the value of 32 mud punts at Rs. 1,000 each, which was recovered from the Port Commissioners, to whom the punts were sold.

The following statement shows the quantity of silt lifted by each class of dredger and the charges which should be added to the rates for dredging on account of interest on capital and repairs to the plant: no allowance is made for depreciation of the plant:—

PARTICULARS.		Prime cost.	Interest at 4 per cent.	Charge for interest per 1,000 cubic feet.	Cost of repairs.	Charge for repairs per 1,000 cubic feet.	Charge for interest and repairs in 1898-99.
1		2	3	4	5	6	7
Quantity of silt lifted.		C. ft.	Rs.	Rs.	Rs. A. P.	Rs.	Rs. A. P.
Fouracres' dredgers—	Eastern Sone Division ...	677,857	...	...	...	...	...
	Arrah Division ...	554,233	...	...	...	...	...
	Dehri Workshops subdivision ...	967,231	...	...	...	...	...
	Buxar Division ...	633,478	...	...	...	...	...
Total ...		2,831,799	80,176	3,307	1 9 1	1,705	0 10 1
Bruce's dredgers ...	Dehri Workshops subdivision ...	43,277	33,574	1,343	31 0 6	30	0 19 8
English or ladder dredgers ...	Ditto ...	606,760	1,21,205	4,848	7 16 11	91	0 2 8
Mud punts—In all Divisions ...		3,481,835	2,80,863	11,335	3 8 7	6	...
Total ...		...	5,15,818	20,638	...	1,921	...

The gross cost of dredging work done on the Sone Canals, exclusive of hand clearances, is given below. The figures do not include provision for depreciation of the plant:—

PERIOD.	Gross quantity dredged in all divisions.	Cost of "lifting" and "discharging."	Repairs to dredging plant.	Total cash expenditure.	Interest on capital cost of plant.	Grand total.
1	2	3	4	5	6	7
Average of 5 years ending 31st March 1889 ...	Cubic feet. 10,977,293	Rs. 62,826	Rs. 13,575	Rs. 76,401	Rs. 19,609	Rs. 96,010
Average of 5 years ending 31st March 1894 ...	12,050,758	62,925	14,067	77,012	19,809	96,821
Year 1894-95 ...	9,432,461	40,204	11,630	51,834	24,099	75,933
Year 1895-96 ...	3,550,791	10,338	5,170	15,408	23,700	39,108
Year 1896-97 ...	4,568,553	11,498	2,855	14,353	22,981	37,334
Year 1897-98 ...	3,102,696	9,234	3,819	13,053	21,912	34,965
Year 1898-99 ...	3,481,835	11,321	1,921	13,242	20,638	33,875
Average of five years ending 31st March 1899 ...	4,827,267	16,511	5,079	21,590	22,665	44,255

104. The quantity of silt cleared by hand from main canals in the Eastern Sone Division, and the cost, compared with the figures for the two previous years, are shown below:—

	1896-97.			1897-98.			1898-99.		
	Quantity cleared by hand.	Cost.	Rate.	Quantity cleared by hand.	Cost.	Rate.	Quantity cleared by hand.	Cost.	Rate.
1	2	3	4	5	6	7	8	9	10
Eastern Main and Patna Canals ...	C. ft. 1,085,945	Rs. 2,858	Rs. A. P. 2 10 1	C. ft. 3,366	Rs. 48	Rs. A. P. 12 11 2	C. ft. 672,600	Rs. 1,601	Rs. A. P. 2 10 0

The Superintending Engineer writes:—

“The quantity cleared by hand in the Eastern Main Canal was immediately inside the Head Sluices for a short extension of the berm towards them, as a bar was found to form there in the wider channel, and also just below the off-take of the Patna Canal, *i.e.*, in the 5th mile. The extension of the berm proved satisfactory, as the bar to a great extent disappeared. In the Patna Canal the silt removed by hand and by dredgers was entirely in the channels just above and below the lock: the closure enabled a larger quantity to be removed by hand than in the previous year, which accounts for the less rate, *viz.*, Rs. 3-3 9, against Rs. 3-12.”

The Western Main Canal was closed from 26th March to 9th April 1898, but no silt clearance by hand was carried out between the Regulator and the 9th mile in the Dehri Workshops subdivision during the year under review.

In the Arrah Division silt clearance by hand to the extent of 435,112 cubic feet, costing Rs. 953, was executed in the lock channels during the closure of the canal.

In the Buxar Division during the closure the following silt clearances were effected by hand:—

	C. ft.	Cost.
		Rs.
Western Main Canal and its distributaries ...	399,342	992
Locks I to VIII, Buxar Canal and branches and distributaries ...	245,727	612
Total ...	645,069	1,604

105. The following figures give the cost of weed-clearing for the last five years:—

DIVISION.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Eastern Sone ...	584	...	4	3	...	118	...
Arrah ...	1,391	638	346	108	74	512	...
Dehri Workshops ...	1,656	2,273	1,748	1,218	97	1,398	89
Buxar ...	1,134	179	123	451	885	454	189
Total ...	4,765	3,090	2,221	1,780	556	2,482	287

The cost of weed clearance in the Sone Canals has greatly reduced in late years. The result is a considerable saving in expenditure. The Executive Engineer of the Arrah Division, Mr. DeMello, has made various observations and experiments in one of the lower reaches of the Canal, which tend to show

that the diminution in the weeds is mainly due to the large discharges which have been kept up, of late years, in the Canal to flush the Canal. The Chief Engineer is disposed to think that the reduction in the weeds, at the heads of the Canals, is due partly to this, but, mainly, to the fact that the flushing system has resulted in removing the deposits of mud, and substituting fine sand, to a large extent, in the channels.

The Superintending Engineer writes :—

"The amounts shown as expended in the Arrah Division and Dehri Workshops were for clearing the sites where the discharge observations are taken. There was actually no weed clearance proper, except in two reaches of the Buxar Canal, and, as subsequent events showed, these might have been left alone. In connection with the subject of weed clearance Mr. DeMello, Executive Engineer, Arrah Division, writes :—

'The weeds have again been kept down by the system of flushing the canal during the cold and hot-weather months. The result was perfectly satisfactory both in the Western Main and Arrah Canals, the only drawback being that the system has to be intelligently worked and the results to be carefully watched, owing to the constant changes effected by the growth and decay of the weeds.' He gives instances to show the necessity of the watchfulness and intelligence required in working the system but for which weed clearance would certainly have been started, and adds :—'Further experience will hereafter enable the Sub-divisional Officers to meet the varying circumstances that occur during the season, but at present it is somewhat novel, and they have to be carefully guided. In working this system the aim has been to run the canal as high as possible, while at the same time keeping the surface slope as great as possible by lowering the gauge levels at the end of the reach.' That weeds grow in most of the reaches of the canals is undeniable, but the Superintending Engineer is of opinion that if the system of flushing described above is adopted, their removal is unnecessary, so long as all the water required for irrigation at the period of their most vigorous growth can be supplied, and so far there has been no trouble in this respect. The obstruction to navigation is of small consequence. Possibly the weeds may retard the passage of a steamer between the terminal stations an hour. As soon as the floods set in they die down to revive again in the cold weather."

MILEAGE
RATES OF
REPAIRS OF
CANALS AND
DISTRIBUTA-
RIES.

106. The following statement compares the cost of repairs to main canals and distributaries per mile, during the year, with the cost in the two previous years :—

CANAL.	Division.	1896-97.		1897-98.		1898-99.	
		Number of miles.	Cost per mile.	Number of miles.	Cost per mile.	Number of miles.	Cost per mile.
1	2	3	4	5	6	7	8
		No.	Rs.	No.	Rs.	No.	Rs.
Eastern Main Canal ...	Eastern Sone ...	7½	625	7½	277	7½	680
Western ditto ...	Dehri Workshops Sub-division.	9	1,721	9	1,111	9	1,121
	Buxar ...	12½	257	12½	215	12½	319
Buxar Canal ...	Do. ...	45½	240	45½	190	45½	259
Patna do. ...	Eastern Sone ...	79	167	79	175	79	238
Arrah do. ...	Arrah ...	65½	279	65½	298	65½	282
Dumraon Branch ...	Do. ...	40½	117	40½	139	4½	167
Behea do. ...	Do. ...	31	119	31	115	31	178
Chowra do. ...	Buxar ...	39½	135	39½	120	39½	126
Gurrah Chowbey Branch ...	Do. ...	38	122	38	95	38	81
	Arrah ...	470	38	470	36	472	37
Distributaries ...	Buxar ...	409	36	409	30	409	37
	Eastern Sone ...	350½	29	350½	25	350½	24

The reduction in the cost of the repairs of the distributaries in the Arrah Division is satisfactory. The expenditure in this Division, which used to be on a rather lavish scale, has now been reduced to a very moderate figure: this, the Chief Engineer is aware, is mainly due to the steady perseverance of the Executive Engineer, Mr. DeMello.

MILLS.

107. The receipts during the year from the mills were Rs. 1,031, against Rs. 1,015 in 1897-98, and the expenditure incurred on their upkeep was Rs. 382, against Rs. 240 in the previous year. The Nasriganj turbine was not leased during the year owing to the depression in the sugar trade caused by the importation of bounty-fed sugar. The amount realised was on account of rent of the previous year.

CALCUTTA AND EASTERN CANALS.

108. The Capital and Revenue Accounts of these canals are given below:—

CAPITAL ACCOUNT.

1.—CAPITAL ACCOUNT.

HEADS OF ACCOUNT.	Outlay during 1898-99.	Outlay to end of 1898-99.
1	2	3
	Rs.	Rs.
Direct charges ...	64,993	64,23,478
Less—Receipts on Capital Account...	...	54,467
Total direct charges ...	64,993	63,69,011
Indirect charges ...	1,293	92,241

The canalization of the Bhangore khal, chargeable to the Capital Account of the Calcutta and Eastern Canals, was completed during the year. The cost of the work is given in the following statement:—

SUB-HEAD OF WORKS.	Expenditure during the year.	Expenditure to end of 1898-99.	Amount as per sanctioned estimate.
1	2	3	4
	Rs.	Rs.	Rs.
B.—Land ...	11,990	45,050	46,676
D.—Regulator ...	29,027	87,587	80,357
F.—Drainage and sluices ...	...	...	10,000
G.—Bridges ...	...	...	10,000
I.—Navigation ...	1,953	3,70,850	3,84,572
K.—Buildings ...	...	9,469	80,000
L.—Earthwork ...	9,170	3,56,789	2,87,204
Total ..	52,140	8,69,745	8,48,809
Establishment ...	9,234	1,90,166	1,84,491
Tools and plant ...	...	21,486	24,064
Total Direct Charges ...	61,374	10,81,397	10,57,364

The work done during the year was the remodelling of the old khal at Kulti and connecting it with the supply sluice. The accounts of the whole work were finally closed before the end of the year.

REVENUE
ACCOUNT.

2.—REVENUE ACCOUNT—(Actuals).

	EXPENDITURE—			RECEIPTS—	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
I.—Works, maintenance and repairs ...	1,60,543	2,25,938	Navigation ...	4,15,556	3,77,092
II.—Revenue management ...	36,600	40,935	Miscellaneous ...	10,794	32,682
Total direct charges	1,97,143	2,66,873	Total ...	4,26,350	4,09,774
Indirect charges ...	4,262	13,804	Less—Refunds of revenue ...	147	493
Total working expenses ...	2,01,405	2,80,677			
Profit ...	2,24,798	1,28,604			
Total ...	4,26,203	4,09,281	Net total receipts ...	4,26,203	4,09,281

FINANCIAL
RESULTS.

109. The following is a statement of the receipts, working expenses, and net revenue of the canals for each of the last ten years:—

	1898-99.	1899-01.	1901-03.	1902-03.	1903-04.	1904-05.	1905-06.	1906-07.	1907-08.	1908-09.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Navigation ...	4,88,399	5,10,203	5,15,125	4,61,710	4,07,005	4,30,709	4,34,275	4,20,425	4,15,556	3,77,092
Miscellaneous ...	7,312	5,883	10,218	15,628	15,120	12,088	21,228	13,639	10,704	32,682
Total ...	4,95,711	5,25,140	5,25,343	4,80,244	4,20,824	4,43,457	4,55,503	4,40,064	4,26,350	4,09,774
Less—Refunds of revenue ...	78	61	124	130	283	454	259	190	147	493
Net total receipts ...	4,95,633	5,25,085	5,25,219	4,80,114	4,20,541	4,43,003	4,55,244	4,39,874	4,26,203	4,09,281
WORKING EXPENSES.										
DIRECT CHARGES.										
<i>I.—Works, Maintenance, and Repairs.</i>										
Works (extensions and improvements) ...	1,244	36,676	30,290	(—)28,408	53	1,766	13,250	40,059	1,324	2,828
Maintenance and repairs ...	1,65,315	1,40,872	1,72,457	1,66,223	1,64,943	1,64,870	1,08,477	1,31,650	1,38,537	1,45,136
Establishment, including direction and accounts ...	56,618	64,041	65,757	66,754	54,855	55,709	37,037	(—)20,940	(—)16,156	57,667
Tools and plant ...	13,510	20,691	12,541	13,207	14,745	13,958	20,317	28,001	20,838	20,308
Total ...	2,30,687	2,71,280	2,87,044	1,69,086	2,34,597	2,36,369	2,39,670	1,87,770	1, 0, 543	2,15,938
<i>II.—Revenue Management.</i>										
Navigation establishment ...	36,281	38,343	41,380	39,935	30,344	39,553	40,666	40,276	36,600	40,855
Total direct charges ...	2,66,968	3,09,623	3,28,423	2,39,021	2,73,041	2,75,922	2,80,336	2,28,046	1,07,143	2,56,793
INDIRECT CHARGES.										
Capitalization of abatement of land revenue ...	12,165	14,334	14,998	12,570	13,188	13,345	11,004	2,707	4,262	13,804
Leave and pension allowances ...	12,165	14,334	14,998	12,570	13,188	13,345	11,004	2,707	4,262	13,804
Total indirect charges ...	2,79,133	3,23,667	3,43,990	2,62,177	2,67,129	2,89,267	2,01,640	2,30,759	2,01,405	2,80,677
Total working expenses ...	2,16,410	2,01,128	1,81,820	2,27,937	1,38,412	1,68,736	63,004	2,09,179	2,24,798	1,28,604
Net revenue ...										

Under extensions and improvements a diversion cut was made in the Bhil route between the Kumar and Madhumati rivers, and certain gauges were fixed in the Boytaghatta khal. The expenditure was Rs. 2,828 compared with Rs. 1,324 in the previous year.

The percentage of the net revenue on the capital outlay is shown below for ten years:—

YEAR.	CAPITAL OUTLAY (DIRECT AND INDIRECT):—		RECEIPTS AND WORKING EXPENSES.			Percentage of net revenue to capital outlay to end of year.
	During the year.	To end of the year.	Gross revenue.	Charges (direct and indirect).	Net revenue.	
1	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	
1889-90	49,369	52,88,485	5,76,125	2,93,801	2,81,324	5.3
1890-91	(—)281	52,88,204	4,95,643	2,79,138	2,16,410	4.1
1891-92	5,693	52,93,897	5,26,185	3,23,957	2,01,128	3.8
1892-93	(—)10,327	52,83,570	5,26,219	3,43,399	1,81,820	3.4
1893-94	74,279	53,57,849	4,80,114	2,62,177	2,27,937	4.2
1894-95	(—)408	53,57,446	4,20,541	2,87,129	1,33,412	2.5
1895-96	1,076	53,58,522	4,43,063	2,89,267	1,53,736	2.8
1896-97	1,27,891	54,86,353	4,55,244	2,91,640	1,63,604	2.9
1897-98	4,68,975	59,55,328	4,39,938	2,30,759	2,09,179	3.5
1898-99	4,39,638	63,94,966	4,26,203	2,01,405	2,24,798	3.5
Average of previous five years	2,07,423	57,10,523	4,36,986	2,60,040	1,76,946	3.1
1898-99	66,286	64,61,252	4,09,231	2,80,677	1,38,604	2.0

The total receipts amounted to Rs. 4,09,281, as compared with Rs. 4,26,203 in the previous year, showing a decrease of Rs. 16,922. This falling-off was mainly attributable to the general dulness in trade and to the plague scare. The working expenses increased from Rs. 2,01,405 to Rs. 2,80,677. The increase chiefly took place in the maintenance and establishment charges of the year. The excess expenditure on maintenance was due to the heavy cost of silt clearance of Tolly's Nala and to the improvements carried out to the Angeria Creek in the steamer route. In the previous year the establishment charges, owing to an adjustment of account, were a minus quantity: in 1898-99 they were not only a positive charge, but, as there was very little expenditure on capital works during the year, the establishment charges were not divided between the capital and revenue as in the previous year. So that under establishment alone there was an increase of about Rs. 70,000. The net revenue of the year was Rs. 1,28,604 against Rs. 2,24,798, showing a decrease of Rs. 96,194. The result of the year's working was very disappointing. The number of steamers and flats which used the canals during the year was 194 against 274 in the preceding year. These figures are exclusive of the vessels which use the Sunderbans route; the number which passed through this route during the year was 2,672 against 2,197 in 1897-98 and 1,336 in 1896-97. The flats and steamers pay a nominal toll of Rs. 5 for each trip for using the route.

110. The lengths of channels open for navigation remained the same as last year, viz., 737 miles, as detailed below:—

	Miles.	Miles.
(1) Calcutta and New Cut Canal ... ..	...	10
(2) Tolly's Nala, including 20 miles of Kaorapukhur khal ... ..	...	37
(3) Eastern Canals ... ..	...	...
Inner boat route	189	...
Outer ditto	127	...
(4) Sunderbans steamer route ... ..	...	316
(5) Bhil route between Kumar and Madhumati rivers connecting Khulna with Madaripur ... ..	...	350
	...	24
Total Calcutta and Eastern Canals ... ..	...	737

LENGTHS OF CANALS.

NAVIGATION.

111. The following statement shows the collections made during the year by the Collector and Supervisor of the Canals, and by the Executive Engineer, respectively:—

CANALS.	Num-ber of boats and rafts.	COLLECTIONS BY COLLECTOR AND SUPERVISOR.						COLLEC-TIONS BY EXECUTIVE ENGINEER.	GRAND TOTAL, GROSS REVENUE.
		Tolls from boats and rafts.	Demurrage.	Ferry tolls.	Tolls from steamers and flats.	Rents of buildings, fishery rent, and other miscellaneous receipts.	Total.	Rents of buildings, lands, and other miscellaneous receipts.	
1	2	3	4	5	6	7	8	9	10
	No.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Calcutta and Eastern Canals	69,030	2,51,000	2,902	3,000	12,300	5,000	2,07,613	20,000	
Tolly's Nala	44,556	71,736	1,000	1,000	...	277	74,101		
Total, 1898-99	113,586	3,22,421	3,906	4,000	12,300	5,257	3,81,714	20,000	4,09,714
Total, 1897-98	123,982	3,90,453	6,301	5,218	12,480	6,045	4,20,502	5,848	4,26,350

The total tolls from boats and rafts plying on these canals and Tolly's Nala amounted during the year to Rs. 3,53,421, against Rs. 3,90,453 of the previous year, showing a decrease of Rs. 37,032.

The decrease on the Calcutta and Eastern Canals was Rs. 42,163. It was mainly due to the bad trade in jute and lime, and to the diversion of kerosine oil, coal and salt traffic to railways and flats. The plague scare had also some effect on the decrease.

On the Tolly's Nala there was an increase of Rs. 5,131, which was caused by the better rice traffic during the year.

The large increase in the collection of miscellaneous receipts by Executive Engineer was to a large extent due to the sum of Rs. 20,000, being the amount of the results of the sale of the Balliaghatta godown to Messrs. George Henderson & Co., having been credited as receipts during the year.

The following are the principal articles of traffic on the Calcutta Canals and Tolly's Nala in 1898-99, the increase or decrease in collections and maundage being shown against each:—

ARTICLES.		+ or - in maunds.	+ or - in collection.	REMARKS.
1		2	3	4
			Rs.	
Rice	...	+11,09,266	+20,147	
Jute	...	-17,65,389	-30,598	
Firewood	...	-5,10,260	-7,532	
Spices	...	+12,540	+102	
Empty boat	...	...	-1,634	
Fish	...	-14,610	-621	
Salt	...	-1,06,962	-3,538	
Lime	...	-4,21,350	-6,076	
Coal	...	-12,590	-1,077	
Kerosine oil	...	-1,33,913	-1,795	
Passenger boat	...	...	-450	

During the year there was a general falling-off in all articles of traffic except in rice and spices. The decrease in jute traffic was due to the partial failure of jute crop which was an unusually bad one. The falling-off in empty boats was also due to the same cause.

In rice traffic there was an increase of Rs. 20,147. The increase took place principally at Dhappa and Chitpur toll stations where the trade was very active.

112. The table below classifies the boats which used the canals during the last two years :—

TRAFFIC.

YEAR.	Canal.	NUMBER AND CLASS OF BOATS EXCLUSIVE OF RAFTS.					
		Up to 100 maunds.	Between 100 and 1,000 maunds.	Between 1,000 and 2,500 maunds.	Between 2,500 and 5,000 maunds.	Over 5,000 maunds.	Total.
1	2	3	4	5	6	7	8
1898-99	Calcutta and Eastern Canals.	23,007	35,405	4,806	1,063	81	64,961
	Tolly's Nala ...	19,013	11,435	159	...	...	30,607
	Total, 1898-99 ...	42,020	46,840	4,965	1,063	81	95,569
1897-98	Calcutta and Eastern Canals.	30,771	45,618	5,633	1,108	44	73,073
	Tolly's Nala ...	19,058	11,440	120	...	...	30,618
	Total, 1897-98 ...	49,829	57,058	5,753	1,108	44	1,03,691

There was a decrease of 8,031 in the total number of boats which entered the canals during the year as compared with the number in 1897-98, and in that year there was a decrease of 5,376 as compared with 1896-97.

The number of small boats, or *saltis*, which entered Tolly's Nala from Kaorapukhur and paid tolls at Russa during the year was 17,716 against 20,244 in the previous year, showing a decrease of 2,528. The decrease was partly due to the shallow state of the Kaorapukhur khal and partly to the closure of Tolly's Nala for silt clearance. Including the *saltis*, the total number of boats was 113,284 against 123,843 in the previous year.

The number of steamers, launches, flats, and barges that entered the canals during the last five years is given below :—

1894-95	...	221	1897-98	...	274
1895-96	...	312	1898-99	...	194
1896-97	...	349			

There was a decrease of 80 vessels during the year compared with the previous year. The Superintending Engineer explains :—

"No flats now enter at Dhappa, which accounts for the decrease during the year in the number of vessels entering the Circular Canal. This class of traffic is being gradually replaced by cargo-boats and barges which are towed by steam-launches."

These figures are exclusive of the vessels that used the Sunderbans route and of the exempted vessels (155 in number), which mostly belonged to the Forest Department.

The number of steamers and flats that paid toll at the rate of Rs. 5 for using the Sunderbans route during the last five years is given below :—

1894-95	...	1,385	1897-98	...	2,497
1895-96	...	1,482	1898-99	...	2,672
1896-97	...	1,386			

The large increase of 1,161 in 1897-98 and of 1,336 during the year, compared with the year 1896-97, was due to the opening of a new line of steamers by the India General Steam Navigation Company between Cachar and Calcutta. There would no doubt have been a further increase during the year had the jute crop been better.

The tonnage of boats, as determined by canal measurement, and the estimated weight and value of the cargo and the tolls realized are shown in the comparative statement below:—

YEAR.	Canal.	Number of boats, including passenger and empty boats, but excluding rafts.	Tonnage of boats by canal measurement.	Weight of cargo.	Value of cargo.	Tollage, including demurrage.	Percentage of toll on value of cargo.
1	2	3	4	5	6	7	8
1898-99 ...	Calcutta and Eastern Canals	No.	Tons.	Tons.	Rs.	Rs.	...
	Tolly's Nala ...	61,961	691,866	487,053	3,91,87,559	2,97,679	...
		48,328	241,295	168,953	99,08,996	72,700	...
	Total, 1898-99 ...	110,289	933,161	656,006	4,90,96,555	3,70,379	0.76
1897-98 ...	Calcutta and Eastern Canals	73,072	781,129	560,175	4,89,32,787	3,41,184	...
	Tolly's Nala ...	50,771	235,528	180,290	1,00,10,946	67,760	...
	Total, 1897-98 ...	123,843	1,016,657	720,465	5,89,43,733	4,08,944	0.69

There was a decrease of Rs. 98,47,178 in the value of cargo, due to the large decrease in weight of cargo carried.

113. The number of missing tickets in each of the last ten years is shown below:—

YEAR.	No.	YEAR.	No.
1889-90 ...	238	1894-95 ...	170
1890-91 ...	212	1895-96 ...	155
1891-92 ...	210	1896-97 ...	86
1892-93 ...	169	1897-98 ...	91
1893-94 ...	252	1898-99 ...	66

114. In the Circular Canal 27 boats were wrecked during the year. Of these 25 were made over to their owners on payment of cost incurred, 1 was sold as unclaimed, and 1 sunk in deep water and could not be recovered. In Tolly's Nala 18 boats were wrecked, of which 17 were made over to their owners and 1 was sold. Of the 62 boats wrecked in the Eastern Canals, 36 were removed by their owners, 19 by the Public Works Department, the cost of removing being realized by recovery of salvage from owners by the sale of cargo, and 7 were destroyed by fire; 3 boats were arrested for plying without tickets, and 1 man was fined 8 annas by the Magistrate of Sealdah for committing nuisance on the canal banks.

115. During the year 15,527 boats were checked by the Supervisor, Calcutta Canals, and his subordinates. Of these 15,465 boats were found correctly measured, 41 under-measured, and 21 over-measured; Rs. 18-11 were realized on account of under-measurement and Rs. 13-7 refunded for over-measurement.

116. The following statement compares the cost of the revenue establishment for each of the last five years:—

PARTICULARS.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
Salary and commission of Supervisor ...	9,946	10,481	8,971	4,121	9,097
Salary of Canal Inspectors ...	4,882	5,307	5,283	5,160	5,160
Supervisor's office establishment ...	6,931	6,847	7,191	7,742	8,269
Canal police ...	2,067	2,046	2,146	2,288	2,102
Supervisor's steam-launch establishment ...	...	...	...	...	...
Inspector's boat establishment ...	645	693	781	796	724
Dhappa water-boat establishment ...	168	167	165	192	177
Dafadars ...	828	829	872	923	869
Travelling allowances ...	42	151	19	52	22
Contingencies ...	1,624	1,675	1,684	1,721	1,550
Toll-collecting establishment ...	12,232*	12,710*	13,214*	13,605*	13,935*
Total cost of establishment ...	39,403	40,966	40,276	38,600	40,935

* Includes salaries of darogahs, clerks, cashiers, kootnavises, koyals, toll peons, and dinghi crews.

MISSING
TICKETS.

WRECKED.

CHECK MEASUREMENT OF
BOATS.

REVENUE
ESTABLISHMENT.

The increase or decrease in the expenditure is thus explained by the Superintending Engineer:—

"Under the head "Salary of Supervisor" there was an increase of Rs. 4,916, due to Mr. Cooksey having drawn the usual commission during the year, which his *locum tenens* did not get while the Supervisor was on furlough in the previous year. Although there was an increase of Rs. 527 in the Supervisor's office establishment, there was a corresponding decrease in the toll office establishment, owing to the transfer of a cashier from the latter office to the head office, in accordance with the orders of Government. In the police establishment there was a decrease of Rs. 186, due to the discontinuance of famine allowance. In the boat establishment there was a decrease of Rs. 151, due to the same reason."

117. The miscellaneous receipts during the year amounted to Rs. 32,682, against Rs. 10,794 in 1897-98, showing an increase of Rs. 21,888. This increase was due principally to the sale-proceeds (Rs. 20,000) of the Balliaghatta godown buildings being credited under this head, and partly to more rent having been realized from Mr. Cooksey for occupying the residence at Chitpur.

118. The state of the plantations for the last two years is shown below:—

YEAR.	Trees over 12 feet.	Saplings from 4 to 12 feet.	Seedlings below 4 feet.	Total.
1	2	3	4	5
1897-98	No. 3,756	No. 874	No. 842	No. 5,472
1898-99	3,843	825	875	5,543

MISCELLANEOUS RECEIPTS.

PLANTATIONS.

The expenditure during the year was Rs. 757 against Rs. 679 in 1897-98. There were no receipts.

119. The statement below shows the distribution of the maintenance charges under the several sub-heads, as compared with the previous year:—

CANALS.	Locks.	Masonry bridges.	Roads.	Buildings.	Plantations.	Dredging.	Channel and bank.	Tow-path.	Rustic bridges.	Steam-launches.	Miscellaneous.	Drainage.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Calcutta Canals { 1898-99	2,487	2,063	4,675	1,391	162	24,319	1,564	1,022	445	4,186	13,327	89	66,933
{ 1897-98	3,425	3,751	9,316	2,035	308	19,714	1,477	1,638	416	4,526	13,103	96	59,805
Elly's Nala { 1898-99	...	1,446	211	61	...	...	...	...	...	...	...	...	27,140
{ 1897-98	...	3,512	216	387	...	...	...	...	...	...	...	...	11,570
Underbans { 1898-99	...	...	...	...	...	...	...	...	...	...	...	...	9,657
{ 1897-98	...	...	...	...	...	...	...	...	...	...	...	...	2,593
Steamer route { 1898-99	1,994	...	...	2,533	595	4,289	2,644	6,538	21,214	...	10,193	...	62,055
{ 1897-98	863	...	...	2,033	371	1,066	24,258	5,632	19,471	...	7,852	...	64,596
Western Canals { 1898-99	4,481	4,109	4,889	3,983	757	28,608	36,300	7,931	21,940	4,186	25,857	89	1,45,135
{ 1897-98	4,288	7,263	9,592	4,455	679	20,780	32,028	10,879	20,282	4,526	23,729	96	1,38,537

The maintenance charges show an increase of Rs. 6,598.

120. The work done by the dredgers and the cost, including that of delivering the mud, are shown below:—

	Quantity dredged.	Cost.	Rate per 1,000 cubic feet.
1	2	3	4
	C. ft.	Rs.	Rs. A. P.
Steam dredger <i>Victoria</i> ...	1,313,400	11,703	8 14 6
Fouracres' dredger ...	741,600	6,216	8 6 1
Marchant's dredger ...	54,310	590	10 13 9
Hydraulic dredger <i>Clinker</i> ...	758,160	6,400	8 7 0
Bruce's dredger No. 3 ...	411,480	3,699	8 15 9

DREDGING AND SILT CLEARING.

The actual rates of dredging, excluding the cost of delivering the mud, and the cost of repairs, were as follows—

		Rs. A. P.			
Steam dredger <i>Victoria</i> ...	...	3	7	10	} Per 1,000 cubic feet.
Fouracres' dredger ...	...	2	15	5	
Marchant's dredger ...	...	2	4	3	
Hydraulic dredger <i>Olinker</i> ...	...	3	13	0	
Bruce's dredger No. 3 ...	...	4	7	10	

The total cost of work done during the year was Rs. 28,608 against Rs. 20,780 in the previous year, showing an increase of Rs. 7,828. The increase took place mainly in the working of the dredgers *Victoria* and *Olinker*, which had to be kept constantly employed in the Circular Canal for removing the silt which had accumulated in the previous year between the Chitpur lock entrance and the new cut canal. The result of the dredging operations was satisfactory. No complaints were made during the year of boats being detained at Chitpur for want of sufficient depth of water.

The average number of mud punts which worked daily with the *Olinker* was five, with the *Victoria* seven, with the *Fouracres* three, and with the *Bruce* three. In addition to these, six mud punts were received from the Sone Circle during the year.

STEAMER
ROUTES.

121. The expenditure on the Sunderbans steamer route, and the receipts from steamers and flats using it, are shown below for each of the last ten years:—

YEARS.	Receipts.	EXPENDITURE—			Net revenue.
		On capital account.	On revenue account.	Total.	
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
1889-90 ...	4,040	.....	2,094	2,094	2,546
1890-91 ...	5,425	.....	2,268	2,268	3,157
1891-92 ...	4,640	.....	1,920	1,920	2,720
1892-93 ...	4,955	28,964	2,094	31,058	(—) 26,103
1893-94 ...	5,495	627	2,094	2,721	2,774
1894-95 ...	6,925	754	2,094	2,848	4,077
1895-96 ...	7,410	.....	3,803	3,803	3,607
1896-97 ...	6,080	.....	3,462	3,462	3,218
1897-98 ...	12,485	.....	2,566	2,566	9,919
1898-99 ...	13,360	.....	9,657	9,657	3,703
Total ...	72,015	30,345	32,052	62,397	9,618

There was an increase of Rs. 875 only in the receipts, while in the expenditure the increase was Rs. 7,091; consequently the net revenue was Rs. 3,703 against Rs. 9,919 in the previous year.

The increase in receipts was due to increased traffic on the line of daily steamers run by the India General Steam Navigation Company between Cachar and Calcutta and *vice versa*. There was no expenditure on capital account. The large outlay of Rs. 9,657 on revenue account was incurred in working the heave-up boat and for carrying out improvements in the Angeria Creek, on which alone Rs. 7,563 were expended, against an estimate for Rs. 17,043 which was sanctioned by Government.

During the year 1897-98 the Managing Agents of the India General Steam Navigation Company, Limited, and also the Rivers Steam Navigation Company, Limited, drew the attention of Government to the deteriorated condition of the Angeria Creek in the district of Backergunge. This creek had gradually silted up, and the navigation of steamers, during low water, was a matter of danger and difficulty. This creek forms the only connecting link between

the Eastern and Western Sunderbunds, and also, with the exception of the outer route, is the only convenient communication between Calcutta and the eastern river-borne traffic. The shelving bank of the creek was cut away by hand during the cold weather in the worst places for a width of 30 feet and to a depth of 1 foot below low-water level.

ORISSA COAST CANAL.

122. The capital and revenue accounts of this canal are given below :—

CAPITAL
ACCOUNT.

1.—CAPITAL ACCOUNT.

HEADS OF ACCOUNT.	Outlay during 1898-99.	Outlay to end of 1898-99.
1	2	3
Direct charges	Rs. 14,838	Rs. 44,29,089
Less—Receipts on capital account ...	.....	3,293
Total direct charges ...	14,838	44,25,796
Indirect charges	98	1,06,616

Under the capital account there was an expenditure of Rs. 3,095 (exclusive of tools and plant and establishment charges and suspense accounts) during the year on the works detailed below :—

(a) Construction of a circuit embankment round the inspection bungalow at Jamkunda in Range IVA of the canal to protect it from floods.

(b) Dredging in Ranges IVA, IVB, and V of the canal.

The expenditure incurred during the year on the embankment was Rs. 368 only, and that on the dredging was Rs. 2,727. The bungalow was completed in 1897-98, and the embankment during the year under review. The total outlay incurred on the bungalow was Rs. 4,597, and that on the embankment was Rs. 4,549.

2.—REVENUE ACCOUNT—(Actuals).

REVENUE
ACCOUNT.

PARTICULARS.	EXPENDITURE—		PARTICULARS.	RECEIPTS—	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
I.—Works, maintenance and repairs.	50,844	72,003	Water-rates ...	...	...
II.—Revenue manage- ment.	7,332	6,821	Navigation ...	84,294	72,954
Total direct charges ...	58,176	78,824	Miscellaneous ...	2,431	2,082
INDIRECT CHARGES ...	2,869	3,464	Total ...	86,725	75,036
Total working expenses	61,045	82,288	Less—Refunds of revenue.	1,275	1,942
Net revenue ...	24,405	(—)9,194	Net total receipts	85,450	73,094
Total ...	85,450	73,094			

FINANCIAL
RESULTS.

123. The receipts on the Revenue account, and working expenses of the canal for the last ten years, are shown in the following statement:—

	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Water-rates ...	61	...	...	...	...	...	...	...	...	...
Navigation ...	63,724	64,220	60,051	55,832	95,233	64,094	85,773	82,856	84,294	78,111
Miscellaneous ...	1,563	1,410	2,072	9,149	2,477	1,937	2,580	2,403	2,431	7,111
Total ...	65,348	65,630	62,123	64,981	97,710	66,031	88,353	86,259	86,725	85,222
<i>Less—Refunds of revenue.</i>	15	44	66	47	1,143	91	25	118	1,275	711
Net total receipts ...	65,333	65,586	62,057	64,934	96,567	65,940	88,328	86,141	85,450	84,511
WORKING EXPENSES.										
DIRECT CHARGES.										
<i>I.—Works, Maintenance and Repairs.</i>										
Works (extensions and improvements).	...	...	...	...	...	195	645	...	...	14,000
Repairs ...	50,528	42,312	48,598	45,490	58,234	52,548	40,054	53,525	38,630	32,111
Establishment, including direction and accounts.	926	15,452	17,100	17,266	21,552	19,706	16,361	19,536	13,164	17,111
Tools and plant ...	10,513	9,794	8,464	6,663	7,817	3,999	4,090	4,000	4,000	6,111
Total ...	61,967	67,558	69,162	69,419	87,103	76,448	60,060	77,061	55,844	55,222
<i>II.—Revenue Management.</i>										
Navigation establishment.	6,044	6,208	6,134	6,855	7,029	6,898	6,937	7,006	7,332	6,111
Total direct charges ...	68,011	73,766	75,296	76,275	94,132	83,346	66,997	84,067	63,176	61,333
INDIRECT CHARGES.										
Capitalized abatement of land revenue.	...	...	...	...	...	...	...	...	...	...
Leave and pension allowances.	975	3,032	3,253	3,377	4,061	3,725	3,122	3,716	2,869	3,111
Total indirect charges ...	975	3,032	3,253	3,377	4,061	3,725	3,122	3,716	2,869	3,111
Total working expenses	68,986	76,798	78,549	79,652	98,193	87,071	70,119	87,783	66,045	64,444
Net revenue	(—)3,653	(—)11,212	(—)16,492	(—)14,718	(—)1,566	(—)21,131	18,209	(—)1,642	24,405	(—)1,933

Under extensions and improvements the expenditure incurred during the year was Rs. 16,388 for the protection of the Nalcool lock by means of a rubble revetment along the left bank of the Burrabulloor river, against the revised estimate sanctioned for the work amounting to Rs. 26,066. There was no expenditure under this head in the previous year. The total working expenses during the year was Rs. 82,288, against Rs. 61,045, or Rs. 21,243 more, while the receipts were Rs. 73,094, against Rs. 85,450, or Rs. 12,356 less, the net revenue being a deficit of Rs. 9,194, against a profit of Rs. 24,405.

TRAFFIC.

124. The following table compares the traffic of the year with that of 1897-98:—

YEAR.	Number of boats *	Tonnage of boats.	Value of cargo, including rafts.	Toll.
1	2	3	4	5
	No.	Tons.	Rs.	Rs.
1897-98 ...	19,373	203,069	47,83,562	84,294
1898-99 ...	15,993	167,345	32,72,462	72,954

* Includes passenger and empty boats.

There was a general decrease in all heads of the traffic. Regarding this falling-off, the Superintending Engineer writes:—

"The receipts from the Calcutta Steam Navigation Company were Rs. 12,213 against Rs. 12,753 in the previous year. The decrease is trifling and calls for no remark. The tolls realized from the India General Steam Navigation Company were Rs. 6,769 against Rs. 4,060 in the previous year, while from Messrs. McNeill and Company no tolls were realized. The falling-off is due to the fact that steamers and boats no longer take rice from Balasore to Chandbali.

"There was a slight increase in the number of passengers carried, but it is anticipated that with the opening of the Bengal-Nagpur Railway to Calcutta the passenger traffic will almost entirely disappear from the canal."

"The tollage assessed on the Balliaghai drains, as compared with the previous year, is shown below:—

	1898-99.	1897-98.
	Rs.	Rs.
Taken at Surpai on account of Orissa Coast Canal	2,731	3,321
On tickets taken in Hijili Tidal Canal, part due to Orissa Coast Canal	1,078	934
Total	3,809	4,255
Number of boats	1,684	1,821
Maundage	4,20,576	4,71,314

"The actual cash receipts at Surpai during the year were Rs. 5,292 (of which Rs. 2,980 were due to the Hijili Tidal Canal on through tickets), against Rs. 5,829 in the previous year.

"The falling-off in traffic was partly caused by the plague scare in Calcutta, and partly owing to the silted condition of the Balliaghai drain, by which much of the traffic was diverted to the Orissa Coast Canal by the road to Jhaleshwari. A dredger has been set to work in this drain, and it is hoped that next year's realizations will show an improvement.

"The amount of local traffic compared with the through down traffic shows the proportion of rice going to Calcutta from the Balliaghai drain *via* the Rassulpur river and the Hijili Tidal Canal and is 748 to 1,001, against 1,091 to 965 in 1897-98. Similarly, for boats to Balliaghai, boats *via* the river against those *via* the Hijili Tidal Canal were 860 to 1,041, against 1,259 to 903 in the previous year."

"Table IID accompanying this report shows the details of goods carried by the Orissa Coast Canal during the year. The exports of rice and paddy fell off from 44,807 tons in 1897-98 to 28,862 tons during the year under review, and this heavy falling-off may be attributed partly to the plague scare and partly to the low price of rice prevailing in Calcutta market. There was, however, an increase in the export of jute, oil, spices, building materials, firewood, other food-grains, bamboos and miscellaneous goods, and a decrease in all other items, as compared with 1897-98.

"The import trade of the Orissa Coast Canal did not show any marked improvement during the year. There was some increase in spices, tobacco, other food-grains, and miscellaneous goods, but a considerable decrease is noticed in cotton, raw and manufactured, metals, oils, provisions, sugar, firewood, coke and coal. The fluctuations in other items need no comment.

"The number of boats check-measured by officers and subordinates of the canal are shown in Statement No. 2 attached to this report: 203 boats were check-measured during the year, of which 185 were found to be correctly measured and 18 under-measured. Rupees 71-10-8 were realized from the manjis for boats under measured."

125. There was no Government transport service maintained on the canal. A bi-weekly service is run by the Calcutta Steam Navigation Company between Gewankhali and Nalcool in connection with the India General Steam Navigation Company's steamers between Balasore and Cuttack.

TRANSPORT
SERVICE.

126. The length of the canal from Bhaithghur on the Rasalpur river to Charbatia on the Metai river remained the same as last year, viz., 102½ miles, including 5½ miles of river-crossing: the whole length was open to traffic throughout the year.

LENGTH OF
CANAL.

127. The rainfall registered at Balasore was 53.32 inches compared with 56.55 inches in 1897-98. The average of the previous five years was 70.47 inches. The rainfall at Charbatia and Bhogra was 55.05 and 68.40 inches,

RAINFALL.

against 54.20 and 51.55 inches respectively in the previous year. That at Contai was 55.62 inches against 61.38 in 1897-98.

MISCELLANEOUS RECEIPTS.

128. The miscellaneous receipts are shown below :—

1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2,477	1,987	2,580	2,403	2,431	2,366	2,082

PLANTATIONS.

129. The state of the plantations for the last two years is shown in the following statement :—

YEAR.	Trees upwards of 12 feet in height.	Saplings from 4 to 12 feet in height.	Seedlings below 12 feet.	Total.
1	2	3	4	5
	No.	No.	No.	No.
1897-98 ...	3,141	4,782	4,278	12,201
1898-99 ...	5,830	5,186	4,788	15,754

There was a total increase of 3,553 in the number of trees, saplings and seedlings during the year. The increase was due to new plantations and to more correct count made by the Executive Engineer.

FLOODS.

130. The highest flood levels, recorded on the various rivers crossed by the canal, are shown in the following table :—

NAME OF RIVER.	Locality.	1897-98.		1898-99.		HIGHEST ON RECORD.		REMARKS.
		Date.	Reading.	Date.	Reading.	Date.	Reading.	
1	2	3	4	5	6	7	8	9
Subarnarekha	Bhograi ...	17th August 1897 ...	113.50	19th June 1898	117.90	June 1898	121.80	Without date on Mr. Ver- tannes' plan.
Panchpara ...	Panchpara ...	14th " " ...	111.80	17th September "	112.20	Not known	116.00	
Burrabullong	Nalkul ...	18th October " ...	114.30	16th " "	115.70	22nd September 1898.	116.00	
Matal	Charbatia {	3rd August 1897 ...	110.30	19th " "	110.40	Not known	116.40	Ditto ditto.
		26th October 1897 }						

There was one high flood in the Subornarekha river on the 18th June 1898, when the river rose 11 feet in 12 hours. The highest reading was 117.90 at midnight of the 19th. The high flood level was due to the obstruction caused by the embankment of the Bengal-Nagpur Railway running parallel to the Subarnarekha river for a distance of 10 miles. The Railway Company have since largely increased the water-way of their bridges, and it is anticipated that the next high flood will cause no obstruction. The flood did very little damage to the canal or to the flood embankments. There was only one breach 30 feet long, in Range IV in the 77th mile of the canal.

The highest monsoon levels in the various rages were as follows :—

	1897-98.	1898-99.
Range III.—Bhograi ...	110.50, 19th October 1897	111.00, 14th October 1898
" IVA.—Jamkunda ...	111.60, 19th " "	115.00, 19th June "
" IVB.—Nalkul ...	113.50, 18th " "	114.70, 15th September "
" VB.—Charbatia ...	113.60, 17th " "	113.80, 12th October "

131. The expenditure on maintenance and repairs, by main sub-heads, MAINTENANCE, for the year and for the five previous years, is shown below:—

SUB-HEADS.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Regulators ...	1,115	910	4,061	132	149	1,273	85
River and hill-torrent works.	1,635	4,281	1,640	1,743	1,630	2,186	2,345
Bridges ...	6,061	3,467	3,720	3,597	4,142	4,197	4,313
Escapes ...	7,999	2,320	229	22	419	2,198	845
Navigation works ...	8,299	6,579	7,499	29,747	5,767	11,578	6,391
Buildings...	6,148	3,167	4,057	6,058	4,474	4,781	4,179
Extra works ...	26,477	30,308	17,238	10,109	15,783	19,983	11,858
Tanks (reservoirs) ...	...	...	...	700	...	140	344
Miscellaneous ...	...	...	...	...	...	...	347
Working steamers ...	500	1,516	1,610	1,417	1,316	1,272	1,803
Total ...	58,234	52,548	40,054	53,525	33,680	47,608	32,510

The cost of the repairs was considerably below the average.

132. The following table gives the results of the working of dredgers in the Orissa Coast Canal during the year:—

NAMES OF DREDGERS, HOPPER BARGES, AND MUD FUNTS	Cubic feet dredged.	Cost of—		Total.	Lifting rate per 1,000 cubic feet.	Remov- ing rate per 1,000 cubic feet.	Total rate per 1,000 cubic feet.
		Lifting.	Removing.				
1	2	3	4	5	6	7	8
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Dredger Bruce I (Comus).	324,250	1,358	1,460	2,818	4.18	4.50	8.68
Dredger Marchant No. I.	66,340	546	294	840	8.36	4.50	12.86
Dredger Marchant No. II (Jack).	271,275	1,756	1,261	3,017	6.47	4.64	11.11
Dredger Marchant No. III (Sibpur).	268,550	1,857	1,306	3,063	6.90	4.49	11.39
Total ...	929,415	5,517	4,321	9,738	5.93	4.64	10.47

DREDGING AND SILT CLEARING.

The quantity of work done by each dredger in the Balasore Division during the year is shown in the following table:—

NAME OF DREDGER.	NUMBER OF DAYS.				Total cubic feet removed.	Average cubic feet removed per working day.	TOTAL COST.			AVERAGE COST PER 1,000 CUBIC FEET.		
	Working.	Under repairs.	On transit.	Idle including Sundays when cleaned.			Lifting.	Removing.	Total.	Lifting.	Removing.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13
Bruce I (Comus)	129	100	8	33	334,250	2,553	1,358	1,400	2,818	4'19	4'50	6'09
" II (New) ...	203	110	8	44	580,000	2,901	2,071	2,145	5,416	3'51	5'00	6'51
Marchant I ...	170	108	17	70	380,888	3,239	2,058	1,870	3,928	3'46	4'91	10'31
" II (Jack)	168	159*	4	36	271,375	1,636	1,756	1,261	3,017	6'47	4'64	11'11
" III (Sibpur).	165	96	24	60	269,000	1,407	1,687	1,204	3,063	6'01	4'49	11'40
Total ...	...	...	...	...	1,833,665	...	9,097	8,748	17,839	...	...	...

* This includes period occupied in transit to Dockyard.

The cost of repairs to each dredger and to 15 punts in the Balasore Division during the year was:—

	Rs.	A.	P.
Bruce No. I (Comus)
Do. No. II (New)
Marchant No. I
Ditto No. II (Jack)
Ditto No. III (Sibpur)
15 Mud punts
Total	...	13,445	14 7

No silt clearance by hand labour was done either in the Orissa Coast Canal or the Balliaghai drain during the year.

SARAN CANALS.

CAPITAL ACCOUNT.

183. The project was completed in March 1886, and the Capital Account closed from the year 1886-87. During the year under review, Rs. 15,015 were expended, chargeable to—33 Famine Relief, Imperial, and Rs. (—)14 to 43—Minor Works and Navigation under Capital Account. The Revenue account is given below:—

REVENUE ACCOUNT—(Actuals).

REVENUE ACCOUNT.

PARTICULARS.	EXPENDITURE—		PARTICULARS.	RECEIPTS—	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
Maintenance and repairs	15,444	1,238*	Water-rates ...	3,198	4,318
			Navigation	...	...
			Miscellaneous	461	674
INDIRECT CHARGES ...	302	24	Total ...	3,662	4,992
Total working expenses	15,746	1,257	Less—Refunds of revenue.	1,102	Nil
Net revenue	(—)13,186	(+)3,735	Net total receipts	2,560	4,992
Total ...	2,560	4,992			

* Includes Rs. 654 charged to 38—Famine Relief Imperial.

134. The receipts on Revenue Account and working expenses of the Saran Canals for the last ten years are shown in the following statement:—

	1899-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Water-rates	22,900	24,823	15,755	1,493	6,764	998	1,130	53	3,180	4,318
Commission	123	180	46	34	50	444	411	1,251	464	674
Gratuities ... ..	...	...	...	...	...	...	...	...	...	...
Total	23,113	25,003	15,801	1,527	6,814	1,442	1,541	1,204	3,644	4,992
Refunds of revenue ... ..	...	...	...	...	550	1,382	1,553	1,204	3,632	4,882
Net total receipts	23,113	25,003	15,801	1,527	6,264	(-) 1,000	1,475	934	2,880	4,992
WORKING EXPENSES.										
Direct charges.										
Salaries and repairs	24,900	26,454	9,021	9,517	4,111	1,037	856	9,417	13,256	1,061
Establishment	12,423	10,560	3,710	3,772	1,730	467	237	2,185	2,100	172
Tools and plant	991	389	(-) 193	213	113	(-) 5	...	28	...	...
Total direct charges	38,313	37,403	12,538	13,502	5,954	1,479	1,093	11,625	15,444	1,233
Indirect charges.										
Amortisation of abatement of ... ..	...	...	...	...	...	...	...	...	...	...
Commission and pension allowances	1,739	1,478	519	528	243	63	61	306	302	24
Total indirect charges	1,739	1,478	519	528	243	63	61	306	302	24
Total working expenses	40,052	38,881	13,057	14,030	6,205	1,542	1,364	11,934	15,746	1,257
Net revenue	(-) 16,939	(-) 1,878	2,744	(-) 12,504	79	(-) 2,542	121	(-) 11,000	(-) 13,186	3,735

135. The lengths of the canals and the areas commanded and irrigated by them are given in the following table:—

NAME OF CANAL.	1897-98.								1898-99.							
	Navigable canal.	Canals for irrigation only.	Distributaries.	Area protected from flood.	Area under command.	Area provided with distributaries.	Area irrigated.	Percentage of area irrigated to area provided with distributaries.	Navigable canal.	Canals for irrigation only.	Distributaries.	Area protected from flood.	Area under command.	Area provided with distributaries.	Area irrigated.	Percentage of area irrigated to area provided with distributaries.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Saran Canals.	Miles.				Acres.		Acres.		Miles.				Acres.		Acres.	
Main canal or head cut	6'34								6'34							
Branch Canals.																
I.—Daha feeder	3'34	...	...	...	64,000	1,582	...	...	3'34	...	...	...	64,000	...	...	...
II.—Gandaki	1'57								1'57							
III.—Dhanai	1'00								1'00							
IV.—Gangri	6'57								6'57							
In addition to the above, the following are maintained:—																
I.—Thakrha Sota	1'56	...	...	...	...	...	...	...	1'56	...	...	...	...	...	...	...
II.—Roopan Chap Sota	27'00	...	...	...	...	...	...	...	27'00	...	...	...	...	...	...	...

The canals remained closed during the year.

136. The average rainfall on the area under command is shown by seasons in the table below for the last five years:—

	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
	Inches.	Inches.	Inches.	Inches.	Inches.
Kharif season (August, September, and October)	28.55	22.02	10.76	21.39	33.27
Rabi season (November to February)	2.62	0.50	0.99	0.76	1.27
Total of year	51.28	43.42	28.94	51.17	55.93

The rainfall of the year was 55.93 inches, or 4.76 inches more than the previous year. It was more than the year 1896-97 by 26.99 inches. There was long and continued rain for three weeks in September, the total being 21.05 inches during the month, against an average of 7.85 inches.

137. The discharge of the river Gandak taken at Rewa and Siswa on the 8th and 18th March 1899 was 12,063 and 12,990 cubic feet per second, respectively.

RIVER DISCHARGE.

IRRIGATION.

138. There was no irrigation done during the year as the canals were closed. The total area irrigated in 1897-98 was 1,552 acres.

The areas irrigated since 1881-82 are given below:—

Year.		Area.	Year.		Area.
1		2	1		2
		Acres.			Acres.
1881-82	...	666	1890-91	...	2,226
1882-83	...	1,747	1891-92	...	5,965
1883-84	...	21,122	1892-93	...	3,560
1884-85	...	7,223	1893-94	...	1,568
1885-86	...	4,565	1894-95	...	Nil
1886-87	...	2,146	1895-96	...	Nil
1887-88	...	4,218	1896-97	...	4,080
1888-89	...	7,218	1897-98	...	1,552
1889-90	...	4,215	1898-99	...	Nil

ASSESSMENTS
AND COLLECTIONS.

139. The assessments, remissions, and collections are shown below.—

YEAR.	Assessments.	Remitted or written off.	Collection to end of March 1899.	Balance to be collected.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1896-97 ...	6,416	232	7,544	2,468
1897-98 ...	3,828	.....	
1898-99 ...	Nil	.....	
Total ...	10,244	232	7,544	2,468

During the year there was no assessment of water-rates, as the canals were closed, but a great improvement was made in the collection of arrears. Out of Rs. 10,244 assessed for 1896-97 and 1897-98, Rs. 7,544 were collected and Rs. 232 remitted or written off, leaving a balance of Rs. 2,468 at the end of the year still to be collected.

MISCELLANEOUS RECEIPTS.

140. The miscellaneous receipts were Rs. 674, against Rs. 464 in the previous year.

PLANTATIONS.

141. The state of the plantations for the last two years is shown below:—

YEAR.	Trees over 12 feet.	Saplings from 4 to 12 feet.	Seedlings below 4 feet.	Total.
1	2	3	4	5
	No.	No.	No.	No.
1897-98 ...	10,142	5,767	7,376	23,285
1898-99 ...	10,186	5,750	7,349	23,285

142. The highest flood in the river Gandak occurred on 8th September, and reached 241.30 at Siswa. No damage was done to the cross bunds or sluices. FLOODS.

The heavy rain during the month of September caused local floods, but little or no damage was done.

The expenditure during the year was Rs. 60, against Rs. 60 and Rs. 77 in 1897-98 and 1896-97.

143. The expenditure on maintenance and repairs during the past five years is shown below:— MAINTENANCE AND REPAIRS.

	Miles.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7
		Rs.	Rs.	Rs.	Rs.	Rs.
Repairs to head cut and river protective works ...	6.34	432	459	392	304	231
Repairs to Daha feeder ...	3.34	166	397	2,568	2,349	405
„ to Gandaki feeder ...	1.57	150				
„ to Dhanai feeder ...	1.00	119				
„ to Gangri feeder ...	6.57	170				
„ to dams and channels ...	...	...	...	1,493	324	...
„ to Sadowa channel ...	5.23	...	...	...	10,279	(-)229
Total ...	...	1,037	856	4,453	13,256	407
Establishment ...	...	447	437	2,185	2,160	172
Tools and plant (actual) ...	...	(-)5	...	26	28	...
Refund of revenue ...	...	3,182	75	370	1,102	...
GRAND TOTAL ...	...	4,661	1,368	7,034	16,546	579

The expenditure of Rs. 579 on maintenance during the year is exclusive of Rs. 654 expended on the Gandaki and Gangri feeders, and charged to 33—Famine Relief, Imperial. This amount was subsequently adjusted by the Examiner of Public Works Accounts, Bengal, against the Revenue Account, Saran Canals.

144. There is no dredging on these canals, as all silt is removed by hand. DREDGING AND SILT CLEARING.

NADIA RIVERS.

145. The rivers comprised in this system are the Bhagirathi, Bhairab-Jalangi, Mathabhanga, and part of the Hooghly. The approximate lengths of the rivers shown below remained the same as last year:— LENGTHS OF RIVERS.

Bhagirathi ...	157 miles to Nadia.
Bhairab-Jalangi ...	144½ ditto.
Mathabhanga ...	137 miles to junction of the Hooghly river.
Hooghly ...	32 miles from Nadia to Chakdaha.
Total ...	470½ miles.

REVENUE
ACCOUNT.

146. No capital account of these rivers is kept. The revenue account for the last two years is given below:—

PARTICULARS.	EXPENDITURE—		PARTICULARS.	RECEIPTS—	
	During 1897-98.	During 1898-99.		During 1897-98.	During 1898-99.
1	2	3	4	5	6
DIRECT CHARGES.	Rs.	Rs.		Rs.	Rs.
I.—Maintenance and repairs.	78,353	70,467	Navigation ...	88,555	89,279
II.—Revenue management.	24,145	23,093	Miscellaneous ...	483	147
Total direct charges ...	1,02,498	93,560	Total ...	89,043	89,426
INDIRECT CHARGES ...	6,361	5,862	Less—Refunds of revenue.	...	10
Total working expenses	1,08,859	99,422			
Net revenue ...	(—)19,816	(—)10,006			
Total ...	89,043	89,416	Net total receipts	89,043	89,416

FINANCIAL
RESULTS.

147. The receipts on revenue account and working expenses for the last ten years are shown in the following table:—

	1890-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Navigation ...	1,95,983	3,00,508	1,92,718	1,66,380	1,71,160	1,41,410	1,10,081	93,392	88,555	89,279
Miscellaneous ...	60	130	247	158	86	270	124	82	488	147
Total ...	1,96,043	3,00,644	1,92,965	1,66,538	1,71,246	1,41,680	1,10,205	93,474	89,043	89,426
Less—Refunds of revenue ...	220	162	228	18	1	...	59	...	...	10
Total receipts ...	1,95,823	3,00,482	1,92,737	1,66,520	1,71,251	1,41,688	1,10,146	93,474	89,043	89,416
WORKING EXPENSES.										
<i>Direct Charges.</i>										
Maintenance and repairs, including extensions and improvements.	47,648	53,462	61,704	68,763	77,664	68,568	69,901	60,873	55,068	53,611
Establishment ...	39,537	45,410	45,838	51,581	58,732	60,060	63,430	60,922	43,431	41,873
Tools and plant ...	2,250	2,476	1,330	1,644	1,861	1,890	1,150	1,046	2,462	1,044
Suspense accounts ...	(—)1,036	3,169	(—)3,015	1,069	478	1,238	2,823	(—)1,136	(—)486	(—)2,968
Total direct charges ...	87,604	1,03,537	1,06,857	1,23,064	1,38,435	1,32,385	1,37,400	1,22,289	1,02,498	93,600
<i>Indirect Charges.</i>										
Leave and pension allowances	5,395	6,357	6,417	7,221	8,222	8,494	8,881	8,529	6,301	5,862
Total indirect charges ...	5,395	6,357	6,417	7,221	8,222	8,494	8,881	8,529	6,301	5,862
Total working expenses ...	92,999	1,09,894	1,13,274	1,30,285	1,46,657	1,40,879	1,46,281	1,30,818	1,08,799	99,462
Net revenue ...	92,834	90,588	79,460	35,245	24,594	819	(—)26,235	(—)37,344	(—)19,816	(—)10,006

The financial result is a slight improvement over that of the previous year.

RAINFALL.
IRRIGATION.

148. No rainfall register is kept up for these rivers.

149. There is no regular irrigation from the Nadia rivers. During the flood season water was supplied, as usual, through the embankment sluice between Lalbagh and Plassey for the irrigation of the rice crop.

150. The several classes of boats which plied on the rivers and the tolls collected from them are tabulated below:—

NAME OF RIVER.	NUMBER AND CLASS OF BOATS.								COLLECTIONS BY TOLL COLLECTORS.					
	Up to 100 maunds.	Between 100 and 1,000 maunds.	Between 1,000 and 2,500 maunds.	Between 2,500 and 5,000.	Over 5,000 maunds.	Total.	Number of rafts.	Number of steamers and flats.	Tolls from boats.	Tolls from rafts.	Tolls from steamers and flats.	Total tolls.	Miscellaneous receipts.	Total collections.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bhagirathi (Jangipur toll-station).	No. 6,138	No. 1,703	No. 468	No. 109	No. 11	No. 8,309	No. 26	No. 195	Rs. 15,363	Rs. 91	Rs. 4,710	Rs. 20,163	Rs. 147	Rs. ...
Bhagirathi and Bhyrub-Jalangi (Sarupganj toll-station).	12,509	10,066	533	78	13	23,284	244	214	42,189	433	2,700	45,391	147	...
Mathabhanga and Ichamati (Mathabhanga toll-station).	5,112	5,858	363	36	...	11,369	...	3	23,781	...	1	23,725	147	...
Total, 1898-99	23,840	17,627	1,364	218	24	43,022	270	411	81,275	524	7,480	89,279	147	89,426
Total, 1897-98	23,330	18,790	1,154	198	15	43,477	210	340	84,109	475	3,681	88,555	466	89,043

* Inclusive of empty and passenger boats.

The total realizations of the year showed an increase of Rs. 383 compared with the previous year, in spite of the falling-off both in the number of vessels and collections of tolls at the Sarupganj toll-station. There would probably have been a considerable increase of revenue had not the plague scare of Calcutta interfered with the traffic; the Superintending Engineer reports that boats passing down the rivers actually paid toll to go back again when the boatmen heard of the plague in Calcutta. The reduction in prices during the first six months of the year, combined with the unfavourable state of the Bhagirathi river, also affected the traffic to some extent. The number of steamers using the rivers increased from 284 in the previous year to 314 in 1898-99. The flats increased from 56 to 97. The increase was due to the fact that the steamer companies again commenced to run steamers in the Bhagirathi and Jalangi rivers.

151. The following is a statement of the number of boats, their tonnage, the weight and value of their cargo, and the toll collection:—

NAME OF RIVER.	Number of boats, steamers and flats (exclusive of rafts).	Tonnage of boats by canal measurement.	Weight of cargo.	Value of cargo (exclusive of rafts).	Toll* collection.	Percentage of toll on value of cargo.
1	2	3	4	5	6	7
Bhagirathi ...	No. 8,564	Tons. 101,725	Tons. 45,788	Rs. 32,01,545	Rs. 20,066	...
Ditto and Bhyrub-Jalangi	23,498	468,632	69,177	88,76,868	44,947	...
Mathabhanga and Ichamati	11,371	116,726	41,177	41,98,469	23,725	...
Total, 1898-99	43,433	686,983	156,142	1,63,66,872	88,798	0.54
Total, 1897-98	43,816	475,391	146,087	1,66,80,608	88,000	0.52

* Tolls from boats, steamers and flats (exclusive of rafts).

There was a slight increase in the weight of cargo, but if a series of years is examined, it will be found that there is a marked decrease in the goods passing along these rivers.

The Superintending Engineer remarks:—

"The falling-off in traffic and collections at Sarupganj, as shown by the above figures, occurred entirely in the Jalangi river and is said to be owing partly to the plague scare and partly to the growing apprehension prevailing among the country boatmen as to the difficulty of navigating this river both at the entrance and at certain intermediate shoals.

It is, however, satisfactory to note that this falling-off at Sarupganj was more than sufficiently compensated for by the increase noticeable at both the Jangipur and Hanskhali toll-stations. The total weight of cargo registered during the year under report was 156,142 tons against 146,087 tons in the previous year. The toll collections rose slightly from Rs. 88,080 in 1897-98 to Rs. 88,738 in 1898-99."

It is often supposed that the decreasing traffic on these rivers is due to their deterioration, but it is at least doubtful if this opinion is correct. The plan which accompanies this note shows the Bhagirathi entrance; concerning this the Superintending Engineer writes:—

"The Executive Engineer reports that "the entrance was practically the same as last year, but with a velocity a good deal less than usual, due probably (apart from the fact of the formation of a shelving bank in front, which caused the main current of the Pudda to flow more in mid-stream, thereby reducing the indraught to the Bhagirathi) to the heavy local rainfall during the middle of October, which kept the Bhagirathi up, while the Ganges was falling rapidly, and so rendered the current at the mouth still more sluggish."

On the tracing which accompanies this report is marked roughly the position of the head of the Bhagirathi from 1822 up to date.

Training works at the entrance were started on the 21st October, with a bed level of 56.20 and a minimum depth of 7 feet, and eventually a channel was scoured down to 47.40 by the 16th November, but unfortunately it began silting up outside the training works, and although these were extended out into the Pudda, they failed to be of any practical good, as the velocity was too small. The entrance, though it did not actually run dry even in May 1899, was practically closed for through traffic from the beginning of January 1899, when the depth was only 18 inches.

The number of shoals trained was 61, against 63 in the previous year. The training works done in this river between its entrance and Nadia extended over a length of 154,772 lineal feet, against 177,495 feet in the previous year."

STEAMER
SERVICE.

152. No transport service was maintained by Government on these rivers during the year. The steamer service kept by the several companies is shown in the statement below:—

NATURE OF SERVICE.	TERMINAL STATION.		Outward and inward.	Period.
	From—	To—		
1	2	3	4	5
<i>Calcutta Steam Navigation Company, Limited.</i>				
Twice a week	Calcutta ...	Jiaganj ...	Both ...	From 2nd July to 1st December 1898.
Ditto ...	Do. ...	Katwa ...	Do. ...	From 27th June 1898 to 10th January 1899.
Ditto ...	Azimganj ...	Jangipur and Dhulyan.	Do. ...	From 6th July to 12th November 1898.
Thrice daily	Berhampore ...	Azimganj ...	Do. ...	From 24th June to 29th November 1898.
Ditto ...	Lalbagh ...	Ditto ...	Do. ...	All the year round.
<i>East Indian Railway Company.</i>				
Occasional ...	Rajmahal ...	Jangipur ...	Both ...	From 21st July to 5th October 1898.
<i>India General Steam Navigation Company.</i>				
Occasional ...	North-Western Provinces.	Calcutta ...	Both ...	From 28th July to 2nd September 1898.
<i>Rivers Steam Navigation Company.</i>				
Occasional ...	North-Western Provinces.	Calcutta ...	Both ...	From 11th August to 5th September 1898.

153. The cost of the revenue establishment for the last five years is shown below:—

	1893-94	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Salary and commission of Collectors.	12,644	14,807	14,010	14,338	13,827	13,925	13,762
Cost of office establishment.	3,901	8,494	8,407	8,820	9,169	8,758	8,514
Travelling allowance ...	525	766	756	793	726	713	390
Contingencies ...	947	895	409	422	423	519	427
Total ...	23,017	24,462	23,582	24,373	24,145	23,915	23,093

There was a decrease of Rs. 1,052 compared with the previous year. The decrease took place in the toll stations at Jangipur and Sarupganj.

154. The miscellaneous receipts during the year amounted to Rs. 147 against Rs. 488 in the previous year.

155. The only plantations in connection with the Nadia rivers are those on the berms of the Bhagirathi embankment (Schedule D, No. 94). The number of trees during the year compared with the previous year is shown in the following statement:—

YEAR.	Trees over 12 feet.	Saplings from 4 to 12 feet.	Seedlings below 4 feet.	Total.
1	2	3	4	5
	No.	No.	No.	No.
1897-98 ...	18,401	3,496	736	22,633
1898-99 ...	22,311	3,109	1,343	26,763

The increase during the year is due to bamboo having been shown in numbers and not by clumps, as was done last year.

156. There was a very high flood in the Bhagirathi river during the year. The highest reading of the Berhampore gauge was 29.72 feet on the 24th September 1898. The flood was the highest since 1894, but it was lower than the highest recorded flood of 1890 by 1 foot 2 $\frac{3}{4}$ inches. The peculiar features of the flood were its long duration, the lateness of its maximum rise, and its exceedingly rapid fall. The gauge readings at Gheria and Berhampore for the last ten years are given below:—

YEAR.	Berhampore.	Gheria.
1889 ...	30.37	34.00
1890 ...	30.96	34.70
1891 ...	26.58	29.30
1892 ...	29.12	31.55
1893 ...	27.96	30.75
1894 ...	30.30	32.75
1895 ...	26.12	28.80
1896 ...	25.33	28.50
1897 ...	27.25	30.00
1898 ...	29.72	32.06

The highest flood levels of 1898-99 of the Bhagirathi, Jalangi and Mathabhanga rivers at Berhampore, Surupganj and Hanskhali are compared below with the highest levels in the previous year, and with the highest levels on record. The readings given are the heights above mean sea level:—

RIVER.	Locality.	1897-98.		1898-99.		HIGHEST KNOWN.	
		Date.	Gauge Read-ing.	Date.	Gauge Read-ing.	Date.	Gauge Read-ing.
1	2	3	4	5	6	7	8
Bhagirathi ...	Berhampore ...	29th August 1897 ...	27.25	24th September 1898	30.72	15th August 1890 ...	30.96
Jalangi ...	Surupganj ...	2nd September 1897	27.35	24th " "	31.80	28th " "	34.88
Mathabhanga ...	Hanskhali ...	31st August 1897 ...	20.92	27th " "	25.96	3rd September 1890	30.93

MAINTENANCE
AND REPAIRS.

157. The charges for maintenance and repairs (exclusive of establishment and tools and plant) are detailed below:—

PARTICULARS.	1898-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Re-opening lower entrance channel, Bhagi-rathi river.	546	...	...	...	...	100	...
Training works in river Bhagirathi ...	51,481	41,642	45,604	36,602	28,334	40,750	25,430
" " Bhyrub ...	4,315	3,980	6,107	5,540	5,000	4,191	4,889
" " Jalangi ...	6,130	7,034	6,432	5,540	6,698	6,523	7,155
" " Mathabhanga ...	2,000	2,717	844	1,730	1,776	1,827	2,110
Sounding Nadia rivers ...	6,500	6,535	5,731	6,059	5,820	6,131	6,061
Maintaining and working divisional boats ...	2,635	2,403	2,207	2,800	2,835	2,627	2,394
Petty and other charges ...	3,394	4,178	2,396	2,508	4,410	3,377	5,553
Total ...	77,364	68,588	69,991	60,873	54,588*	60,385	53,611

* Exclusive of land charges amounting to Rs. 230.

The total expenditure incurred on the maintenance of the Nadia rivers, inclusive of charges for extensions and improvements of lands and establish-ment and tools and plant, but exclusive of indirect charges, was Rs. 93,560, as compared with Rs. 1,02,498 of the previous year, thus showing a decrease of Rs. 8,938. The reduction in the Public Works establishment charges from Rs. 21,288 to Rs. 18,780 was caused by the apportionment of a considerable portion of these charges to works and repairs under "Agricultural and Pro-vincial" respectively.

Of the total expenditure of Rs. 93,560 on maintenance and repairs, Rs. 48,059 were spent on training works, Rs. 5,552 on other works, Rs. 18,780 and Rs. 23,093 on Public Works and Navigation establishment charges, respec-tively, Rs. 1,044 on tools and plant, and Rs. (—)2,968 on suspense accounts.

158. No work was done under this head except at a few shoals, where sand was cleared by hand, in order to keep up a running stream of good drinking-water for the towns and villages along the river banks.

159. The wrecked boats removed from the beds of the rivers during the year were 17 besides 179 trees and 45 bamboo clumps. Several trees were also cut down and removed from the cutting banks to prevent their falling into the rivers and endangering the safety of the navigable channels. The banks were, as usual, marked with sign poles to indicate the deep water channels.

GAIGHATA AND BUXI KHAL.

LENGTH OF
KHAL.
MAINTE-
NANCE.

160. The length of this khal is 7½ miles.
161. The cost of maintaining it during the year under review, exclusive of refunds of revenue was Rs. 395, against Rs. 681 in the previous year. The right of collecting tolls has been leased for five years, commencing from the year 1896-97, at an annual rental of Rs. 4,500. The lessees have paid the full amount for the year under review.

EDEN CANAL.

162. This canal is not navigable. It lies partly in the Burdwan and partly in the Hooghly district, its supply of water being obtained from the Damodar. No Capital or Revenue Account is maintained. The aggregate length of the canal and its excavated channels including the two distributaries which were completed in 1897-98 was $45\frac{1}{2}$ miles, as detailed below:—

	Miles.	Fect.
Joojooty sluice and channel, Nos. 1 and 2 ...	2	0
Eden Canal proper ...	19 $\frac{1}{2}$	0
Kana Damodar junction cut ...	2 $\frac{1}{2}$	0
Saraswati junction cut ...	2 $\frac{1}{2}$	0
Connecting channel between the Rankini Doho and the Kana Damodar ...	$\frac{1}{2}$	0
Connecting channel between the Rankini Doho and Kana Nadi ...	$\frac{1}{2}$	0
Distributary No. 1 ...	7	4,720
Ditto No. 2 ...	9	4,055
	<u>45$\frac{1}{2}$</u>	<u>...</u>

LENGTHS OF
CANAL,
CHANNELS
AND DISTRI-
BUTARIES.

Besides the above, the natural channels of the Kana Nadi, Kana Damodar, Banka Nala, and North Saraswati are included in the system.

The gross area commanded by the Eden canal is about 300,000 acres, of which about 200,000 acres are culturable and 100,000 acres irrigable.

163. Revenue accounts are not kept of this Canal: the receipts and expenditure for 1898-99 and the five previous years are given below:—

REVENUE
ACCOUNT.

	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	Average of previous five years.	1898-99.
1	2	3	4	5	6	7	8
<i>Receipts.</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Water-rates ...	35,943	29,674	30,763	36,775	35,789	33,789	28,333
Miscellaneous ...	620	576	355	316	453	464	592
Total ...	36,563	30,250	31,118	37,091	36,242	34,253	28,925
—Refunds of revenue ...	654	50	201	556	407	374	200
Net total receipts ...	35,909	30,200	30,917	36,535	35,835	33,879	28,725
<i>Working expenses.</i>							
Works ...	515	12,554	3,072	51,385	32,294	19,964	8,102
Maintenance and repairs ...	35,619	25,303	37,341	28,039	16,930	28,646	21,386
Establishment ...	13,474	14,129	14,951	28,625	17,537	17,743	9,495
Tools and plant ...	732	752	606	408	276	555	397
Total expenditure ...	50,340	52,738	55,970	1,08,457	67,037	66,908	39,380
Net revenue ...	(-)14,431	(-)22,538	(-)25,053	(-)71,922	(-)31,202	(-)33,029	(-)10,655

The outlay on account of original works during the year was Rs. 8,102 only; the expenditure was confined to the payment of the cost of land acquired for the distributaries constructed in 1897-98. The receipts during the year were Rs. 7,110 less than in the previous year. The decrease was due to the heavy rainfall throughout the cultivating season which retarded the work of collection and reduced the demand for canal-water for irrigation purposes. There was an increase of Rs. 4,456 on maintenance and repairs. It was due to several minor works of improvement having been carried out during the year. The total expenditure of the year was Rs. 39,380 against Rs. 67,037, and the net revenue was a deficit of Rs. 10,655 only against a deficit of Rs. 31,202

in the previous year. The result of the year's operations was, on the whole, fairly satisfactory. The revenue was below the average of the previous five years but the expenditure also was considerably less. The canal was maintained in an efficient condition during the year.

RAINFALL.

164. The rainfall registered at Edilpur in the Burdwan district was 72·14 inches, as compared with 62·88 in 1897-98, the fall during the *kharif* season being 48·52 inches, or 4·71 more than that of the previous year.

CROP EXPERI-
MENTS.

165. Regarding crop experiments, the Superintending Engineer writes:—

"Nineteen crop experiments were made with paddy crops by subordinates, of which ten were made on irrigated lands and nine on unirrigated lands. These experiments showed that the average outturn of an acre of middle class land irrigated by canal-water was 33 maunds 5 seers of paddy and 37 maunds and 7 seers of straw weighed dry, while the average outturn of an acre of similar land which did not receive the benefit of canal-water was 20 maunds 1 seer of paddy and 25 maunds 28 seers of straw.

The results of the experiments seem unreliable, as the average yield of paddy in the Midnapore and Orissa canals is 17 maunds 14 seers and 24 maunds 28 seers, respectively. The Executive Engineer will be directed to supervise the experiments next year."

The Chief Engineer quite agrees with the Superintending Engineer in thinking that these results cannot be accepted, and that the Executive Engineer should check the experiments next year.

AREAS LEASED
AND IRRIGAT-
ED.

166. The total area leased was 26,918 acres, as compared with 23,615 acres in 1897-98, showing an increase of 3,303 acres. The increase was due to the execution of some new leases on the banks of the Ilura khal and the Ghea, Dhoosi, and Kana Nadis in the Hooghly district.

In addition to the areas leased permits were issued for 2,318 acres for single watering from the Kana Damodar beyond the area commanded by the Eden Canal.

The total area irrigated during the year was 29,757 acres, consisting of 19,938 acres of *kharif* and 441 acres of *rabi* in the Burdwan district, and 9,080 acres of *kharif* and 298 acres of *rabi* in the Hooghly district, as compared with 24,487 acres in the previous year, viz., 17,557 acres of *kharif* and 520 acres of *rabi* in the former and 6,083 acres of *kharif* and 327 acres of *rabi* in the latter district. Out of the total area of 739 acres of *rabi* irrigated during the year, 143 acres were sugarcane.

The increase in the area under *kharif* irrigation was mainly due to the construction of the distributaries.

The decrease in *rabi* irrigation in both the Burdwan and Hooghly districts was due to the ample rainfall throughout the *kharif* season, especially in September and October 1898 which reduced the demand for canal-water.

There was only one case of surreptitious irrigation during the year. Thirty-six acres were irrigated without a permit in the Hooghly district. The area was assessed at the rate of Re. 1 per bigha.

The following statement shows the area irrigated during the last five years:—

YEAR.	Long lease.	Season lease	One flushing beyond area commanded.	Unauthor-ized irri-gation.	Total.
1	2	3	4	5	6
	Acres.	Acres.	Acres.	Acres.	Acres.
1898-94	11,601	138	...	...	11,739
1894-95	19,650	20	720	...	20,390
1895-96	30,195	1,984	3,884	158	36,221
1896-97	16,580	2,362	2,352	...	21,294
1897-98	21,850	1,459	1,178	...	24,487
Average of previous five years	19,975	1,193	1,627	31	22,826
1898-99	24,959	2,444	2,318	36	29,757

There was an increase of 5,270 acres in the total area irrigated during the year, as compared with the previous year, and an increase of nearly 30

per cent. as compared with the average of the previous five years. The result was satisfactory, considering that the rainfall of the year was both plentiful and evenly distributed.

167. The duty per cubic foot of discharge utilized during the *khari* season was 145.95 acres. But this duty is unreliable, as, owing to the heavy rainfall throughout the season, there was little demand for canal-water. The correct duty of water in the *rabi* season could not be given as the discharge of water utilized was partly used for filling tanks for domestic purposes, &c.

DUTY OF
WATER.

168. The water-rates assessed during the year amounted to Rs. 33,876, as compared with Rs. 29,825 in 1897-98, and adding the unrealized balance (Rs. 17,304) of the six previous years, the gross demand for the year was Rs. 51,180, against Rs. 56,343 of the preceding year. Deducting Rs. 2,857 on account of commissions paid on advance payment, and remissions amounting to Rs. 522, the net assessment of the year was Rs. 47,801.

DEMAND,
COLLECTION,
AND BALANCE.

The collections of the year amounted to Rs. 28,239.* This sum includes Rs. 249 on account of stamp fee and interest which were realized by the certificate officers of Burdwan and Hooghly, and Rs. 200 which were refunded to the lessees for non-irrigation of water to their tanks. The net collection, therefore, was Rs. 27,790. The unrealized balance at the close of the year was Rs. 20,011 against Rs. 17,304 in the previous year. Deducting Rs. 10,699, which were subsequently written off as irrecoverable under Bengal Government orders No. 4T.L.A., dated 13th May 1899, the net balance was Rs. 9,312. The arrears are far larger than they should be, and the Superintending Engineer will be specially addressed on the subject.

* The Examiner has shown in his Finance Accounts for 1898-99 Rs. 28,333. The difference Rs. 94 has been shown by the Executive Engineer as miscellaneous receipts.

The revised water-rate rules for the Eden Canal were framed in March 1898 on the lines of the revised rules for the Midnapore Canal, with the object of removing the inconveniences and difficulties in granting remissions, in filling tanks with canal-water for domestic use, and in supplying water for manufacturing and other purposes. They were passed by the Lieutenant-Governor on the 22nd August 1898, and published in the *Calcutta Gazette* of the 24th idem.

169. The cost of the temporary revenue establishment employed during the year for the supervision and management of irrigation was Rs. 4,338 against Rs. 4,578 in the previous year, showing a decrease of Rs. 240.

REVENUE
ESTABLISH-
MENT.

170. The miscellaneous receipts amounted to Rs. 686 inclusive of Rs. 94 shown by Examiner as water-rate receipts, against Rs. 453 in 1897-98.

MISCELLA-
NEOUS
RECEIPTS.
PLANTATIONS.

171. There was no expenditure on plantations during the year. Nine trees above 12 feet in height and thirteen saplings died within the year, reducing the total number of trees from 300 to 278.

172. There were six floods in the Damodar river during the year. The maximum reading of the floods of the 19th June and 15th September were 16 feet 6 inches or only 4 inches lower than the previous highest known flood at Edilpur. No damage was done to the canal.

FLOODS.

MADHUBAN CANAL.

173. The length of this canal is $6\frac{1}{4}$ miles in the Champaran district.

174. The expenditure incurred on its maintenance during the last five years is shown below:—

LENGTH OF
CANAL
EXPENDITURE.

PARTICULARS.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
Works ...	...	...	...	...	34*
Maintenance ...	5,567	2,488	3,859	4,210	6,882
Establishment ...	2,405	1,269	1,861	2,229	2,610
Tools and plant ...	36	7	71	32	43
Refunds of revenue	27	44	...	...	...
Total ...	8,085	3,808	5,791	6,471	9,569

* This relates to the expenditure on the Tribeni and Dhaka Canals. It has been erroneously shown by Examiner against Madhuban Canal. The amount will be written back in his next year's accounts.

The expenditure during the year was Rs. 3,064 more than last year. The increase was due to the cost of repairing the damage caused by the flood of September to the Teur weir approaches, the embankment on the east up-stream side of the weir, and the canal banks.

RAINFALL. 175. The rainfall during the year was 74·60 inches, against 59·40 inches in the previous year.

REVENUE. 176. No revenue is derived from irrigation on this canal, as water-rates are not recovered. The miscellaneous receipts during the year were Rs. 120, against Rs. 214 in 1897-98.

IRRIGATION. 177. The total area irrigated during the year was 3,190 acres, as compared with 2,000 acres in the previous year. The increase of 1,190 acres was due to the great demand for water from the middle of October to end of December.

The areas of the different crops irrigated during the last five years were as follows:—

NATURE OF CROP.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
	Acres.	Acres.	Acres.	Acres.	Acres.
Bhadoi ...	...	...	...	482	254
Kharif ...	5,033	980	5,873	958	2,010
Rabi ...	117	112	1,905	174	...
Poppy ...	322	783	2,342	386	926
Hot-weather crops ...	46	379	1,131	...	...
Total ...	5,518	2,254	11,251	2,000	3,190

PLANTATIONS. 178. The state of the plantations for the last two years is shown below:—

YEAR.	Trees over 12 feet.	Saplings between 4 and 12 feet.	Seedlings under 4 feet.	Total.
1	2	3	4	5
	No.	No.	No.	No.
1897-98 ...	245	242	230	717
1898-99 ...	245	250	218	713

GENERAL RESULTS.

179. The net results of the year 1898-99, compared with those of the previous quinquennial period, are shown below:—

PARTICULARS.	Receipts from all sources.	Working expenses, including refunds of revenue (direct and indirect charges).	Profit or loss.
1	2	3	4
MAJOR IRRIGATION WORKS.	Rs.	Rs.	Rs.
Average of five years ending March 1898.	17,62,234	14,47,169	+ 3,15,065
1898-99	18,53,877	14,41,402	+ 4,12,475
MINOR WORKS AND NAVIGATION.			
<i>For which Capital and Revenue accounts are kept.</i>			
Average of five years ending March 1898.	5,23,197	3,50,062	+ 1,75,135
1898-99	4,89,802	3,66,657	+ 1,23,145
<i>For which only Revenue accounts are kept.</i>			
Average of five years ending March 1898.	1,26,107	1,43,346	(—) 17,239
1898-99	93,926	99,863	(—) 5,937
<i>For which neither Capital nor Revenue accounts are kept.</i>			
Average of five years ending March 1898.	34,377	73,779	(—) 39,402
1898-99	29,045	49,149*	(—) 20,104
Total ... { Average of five years ending March 1898.	24,47,915	20,14,356	+ 4,33,559
{ 1898-99	24,68,650	19,57,071	+ 5,09,579

* Exclusive of Rs. 18,288 expended on the Tribeni Canal and survey of Brahmaputra river.

Compared with the revised estimates of receipts and expenditure (direct charges) for 1898-99, the total actual receipts, show an increase of Rs. 15,650 and the expenditure, a decrease of Rs. 96,809.

180. Reckoned on earnings, that is, on assessed revenue, as opposed to actual receipts, the net results of the Major Irrigation Works for the last two years were as follows:—

YEAR.	Earnings.	Working expenses.	Profit or loss.
	Rs.	Rs.	Rs.
1897-98 ...	19,20,025	14,55,076	(+) 4,64,949
1898-99 ...	18,61,673	14,41,402	(+) 4,20,271

EARNINGS.

ARREARS.

181. The work done during the year in the recovery of water-rates was particularly good. On the Orissa and Sone Canals there were no arrears at all, and the result may be regarded as highly satisfactory. There was an increase in the arrears on the Midnapore Canal from Rs. 3,518 to Rs. 5,718. This was due to the villagers in the Antra subdivision having declined to pay up their rates, as they expected that remissions would be granted to the villages in which the rice crop had suffered considerable damage.

The figures for the three canal systems are given below :—

CANALS.	Outstanding on 1st April 1898.	Demand of 1898-99.	Collected or adjusted.	Outstanding on 1st April 1899.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
Orissa	664	2,73,191	2,73,855	Nil
Midnapore	3,518	1,12,341	1,10,141	5,718
Sone	1,475	9,30,504	9,31,979	Nil
Total	5,657	13,16,036	13,15,975	5,718

VALUE OF CROPS.

182. In the following table a comparison is made between the approximate value of crops irrigated by Major Irrigation Works during 1898-99 and the previous year :—

CANALS.	1897-98.		1898-99.	
	Area irrigated.	Value of crops.	Area irrigated.	Value of crops.
1	2	3	4	5
	Acres.	Rs.	Acres.	Rs.
Orissa	195,602	71,26,786	194,847	71,04,804
Midnapore	72,206	22,38,386	74,901	19,34,946
Sone	433,445	1,68,71,871	440,796	1,31,65,003
Total	701,253	2,62,37,043	710,544	2,22,04,753

DATE FOR SUBMISSION OF REPORTS.

The average value per acre of the various crops irrigated has decreased from Rs. 37.41 to Rs. 31.25.

183. The date fixed for the submission of revenue reports to the office of the Chief Engineer is the 5th September. The dates when the different reports were received are shown below :—

		In 1898.	In 1899.
Orissa Circle ...	Superintending Engineer's report ...	6th September.	1st September.
South-Western Circle ...	Ditto ditto ...	1st ditto.	31st August.
Sone Circle ...	Ditto ditto ...	29th August.	31st ditto.

All were punctual.

184. Although the results of the working of the canals in Bengal for 1898-99 are not as good as those of last year or the year before, yet they may be considered fairly satisfactory.

The total area assessed on the Orissa Canals was below that of last year by a small amount, due to the lesser area of *rabi* irrigation. Revised water-rate rules were brought into force on the 23rd of May 1899 for these canals, but they did not make any material change in the system of irrigation. The reduction in the number of complaints and the small number of cases pending at the close of the year is a satisfactory feature. The reduction in tonnage of rice carried over the canals was due to the slackness in the export trade. The number of passengers carried showed a decrease of 34,875 compared with last year, and this may be set down chiefly to the opening of the railway at Cuttack. It is almost certain that the whole of the passenger traffic between Calcutta and Cuttack and *vice versa* will ultimately be diverted to the railway, but how far the goods traffic will be affected remains to be seen. The weeds in the High Level Canal, Range I, proved a source of great trouble and expense, and were especially bad during the year under review, as the exigence of the steamer service prevented a closure of the canal, and the growth of the weeds received no check. When the steamer service is withdrawn it will become necessary to close the canal for a protracted period in the hot weather to kill the weeds.

ORISSA
CANALS.

The large increase in the length of the village channels constructed by the villagers themselves, which amounted to over 350 miles, is a sure sign that cultivators thoroughly appreciate the extra facility for water distribution which is gained by the construction of properly designed field-channels. The rainfall, though in excess of last year, was not so favourably distributed, and the practical failure of the *hathia* rain was the direct cause of the increased area assessed for unauthorized use of water. The result of the collection is a matter for congratulation: cent. per cent. has been collected, including last year's arrears, and the collection staff deserve great credit for the energetic and tactful manner in which the realization of the water-rates has been carried out. The great care with which the assessment papers were prepared and the punctuality with which they were submitted to the Collection Department were, no doubt, important factors in attaining such excellent results. The navigation receipts are the heaviest on record, but it is unlikely that they will remain so high, as the carriage of materials for the Moghulserai-Gaya Railway gave them a temporary impetus, which it would be unreasonable to expect to last. It is satisfactory to note that the means adopted for flushing the deposit of silt and checking its accumulation at the heads of the canals continues to act successfully. The cost of silt clearance was greater than last year, but the excess expenditure is explained by the closure of the canals, during which period the opportunity was taken for doing extensive silt clearance by hand above and below the locks and at the bifurcations. The system of flushing the canals during the cold and hot-weather months has proved most satisfactory in checking the growth of weeds.

SOME CANALS.

The results of working this canal are not encouraging. The reduction in revenue is very marked, and is attributable partly to the depression in trade and partly to the opening of the Bengal-Nagpur Railway. The expenditure on maintenance was the highest since the year 1894-95, and was entirely due to the large sum which had to be expended in making good the damage done to the canal works by the floods of June 1898.

MIDNAPUR
CANAL.

As in the case of the other navigable canals in Bengal, there was a marked falling off in the tollage receipts, which is attributed mainly to general depression in trade.

HISTLI TIDAL
CANAL.

There was a decrease in the number of boats which entered the Circular and Eastern Canals. The decrease was partly due to the bad jute season, and partly to silt-clearing operations in Tolly's Nala, which was closed for the purpose. The number of steamers which paid toll for using the Sundarbans route has increased since last year, and a further increase is anticipated.

CIRCULAR
AND EASTERN
CANALS.

The net revenue from the Nadia rivers shows a slight improvement over that of last year, but this is only due to apportionment of establishment charges, and, so far as can be seen at present, it is hopeless to expect any future material increase in the toll-collections.

NADIA RIVERS.

SARAN
CANALS.

There was a considerable increase in the maintenance charges of these canals, which was due to the damage caused to the head-works by the September flood.

MADHURAN
CANAL.
EDEN CANAL.

The working of this canal does not present any special points of interest. Revised water-rate rules were passed for this canal and are now in force. The rules do not in any way alter the system of irrigation.

R. B. BUCKLEY,
Chief Engineer, Bengal.

CALCUTTA,
The 10th November 1899.

PARTICULARS.	ORISSA CANALS.			Midnapore Canal.	Hugli Tidal Canal.	SONE CANALS.		Total.	Saran Canals.	(Calcutta and Eastern Canals.	Orissa Coast Canal.
	Mahanadi Series.	Brahmini - Byturni Series.	Total.			Eastern Main Canal Series.	Western Main Canal Series.				
I	3	3	4	6	6	7	8	9	10	11	12
Source of supply of water	River Mahanadi.	Rivers Brahmini and Byturni.	...	River Cossye	Rivers Rupnarain and Russalpur.	River Sone.			River Gandak.	River Hooghly and Sundarban creeks.	Rivers Russalpur, Subarnarekha, Panchpara, Burra-koln and Metal.
Minimum discharge of river—cubic feet { Kharif ... } per second. { Rabi ... }	Not taken	Not taken	...	200	...	...	...	...	5,083 March	...	...
Maximum discharge of canals—cubic feet per second	3,902	2,156	6,058	22	...	...	...	...	26th, 1884.	...	...
Average annual rainfall	57.92	62.77	58.87	1,500	...	...	...	...	1,084	...	...
Gross area commanded	459,378	137,500	596,878	51.48	...	...	...	...	44.19	...	...
Culturable area	439,951	137,500	577,451	180,000	...	...	...	...	64,000	...	...
Area irrigable by complete project	371,462	96,372	467,834	173,160	...	...	...	...	50,000	...	...
Area irrigable at present...	164,684	64,282	228,966	125,000	...	...	...	...	50,000	...	...
Sanctioned estimate—									39,000		
Direct charges	2,59,98,974	5,85,046	1,21,54,723	82,80,766	...	...	...	...	6,69,570	...	43,73,238
Indirect "	5,85,046	1,21,54,723	1,21,54,723	1,84,661	...	...	...	...	27,183	...	1,06,639
Interest during construction	1,21,54,723	5,85,046	1,21,54,723	54,17,730	...	...	...	...	...	...	...
Total estimate	3,87,38,343	1,21,54,723	3,87,38,343	1,38,83,167	...	...	...	...	6,96,753	...	44,79,877
Expenditure to end of 1898-99—											
Direct charges	2,57,88,378	5,84,773	1,21,54,723	82,80,766	...	...	...	...	6,04,392	...	44,25,796
Indirect "	5,84,773	1,21,54,723	1,21,54,723	1,84,661	...	...	...	...	27,196	...	1,06,616
Interest during construction	2,37,97,193	5,84,773	1,21,54,723	87,24,289	...	...	...	...	...	...	...
Total expenditure	5,01,70,344	1,21,54,723	5,01,70,344	1,71,89,716	...	...	...	...	7,21,589	...	45,32,412
Works as now sanctioned—											
Main canals, irrigation	198 1/2	31 1/2	170 1/2	63	...	...	...	...	6 1/2	...	Nil
Branch "	110 1/2	6 1/2	117 1/2	19	...	...	...	...	12 1/2	...	Nil
Distributaries, including village channels	1,786 1/2	384	2,150 1/2	304.89	...	...	...	...	Nil	...	Nil
Of above—									Nil	...	10 1/2
Navigable channels	202 1/2	38	240 1/2	72	...	...	...	...	Nil	...	47 1/2
Works completed at end of 1898-99—											
Main canals, irrigation	138 1/2	31 1/2	170 1/2	63	...	...	...	...	6 1/2	...	Nil
Branch "	103	6 1/2	109 1/2	19	...	...	...	...	12 1/2	...	Nil
Distributaries, including village channels	971 1/2	129 1/2	1,101 1/2	283.97	...	...	...	...	Nil	...	Nil
Of above—									Nil	...	Nil
Navigable channels	166 1/2	38	204 1/2	72	...	...	...	...	Nil	...	102 1/2

* This shows the cost of construction as now estimated as per Examiner's Administrative Accounts for 1898-99.

† This length is that of the Calcutta and new cut canals and Tolly's Nala, with 20 miles of Kanpurakur khal. The Eastern Canals are 316 miles in length, steamer route 350 miles, and wheel route between Kumar and Madhumati rivers connecting Khulna with Ardaripur, 24 miles. Total length of the Calcutta and Eastern Canals System, 737 miles.

NOTE.

Receipts on Capital Account deducted from the following heads:—

	Works.		Establishment.		Tools.		Total.			Works.		Establishment.		Tools.		Total.	
	Rs.		Rs.		Rs.		Rs.			Rs.		Rs.		Rs.		Rs.	
Orissa Project ...	45,215	{ To end of previous year ...	13,300		28,280		86,795		Damodar Project ...	49,919	{ To end of previous year ...	...		...		52,249	
...	...	{ During 1898-99 ...	...		...		...		...	1,200	{ During 1898-99 ...	...		...		1,200	
Midnapore Canal ...	12,668	{ To end of previous year ...	7,300		11,599		31,558		Saran Project ...	498	{ To end of previous year ...	...		...		498	
...	...	{ During 1898-99 ...	...		...		...		...	...	{ During 1898-99 ...	...		...		...
Hijili Tidal Canal ...	10	{ To end of previous year ...	...		915		925		Orissa Coast Canal ...	3,028	{ To end of previous year ...	260		...		3,288	
...	...	{ During 1898-99 ...	...		...		...		...	...	{ During 1898-99 ...	...		...		...
Sone Project ...	229,213	{ To end of previous year ...	32,711		1,62,226		4,14,150		Calcutta and Eastern Canals.	54,467	{ To end of previous year ...	...		...		54,467	
...	3,040	{ During 1898-99 ...	...		...		3,040		...	...	{ During 1898-99 ...	...		...		...
Tirhut Project ...	45	{ To end of previous year ...	74		39		158		...	...	{ During 1898-99 ...	...		...		...
...	...	{ During 1898-99 ...	...		...		...		...	...	{ During 1898-99 ...	...		...		...

STATEMENT SHOWING THE FINANCIAL RESULTS OF IRRIGATION

Realizations under main heads of

IRRIGATION WORKS.	REVENUE (ACTUAL RECEIPTS).											
	IRRIGATION.			Navigation.	Plantations and lands.	Water-power.	Miscellaneous.	Total.	Refund of revenue.	Gross receipts (less refunds).	REVENUE	
	Water-rates directly paid.	Share of land revenue.	Total.								Direction.	Execution.
1	2	3	4	5	6	7	8	9	10	11	12	13
MAJOR IRRIGATION WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Orissa Project	2,72,332	...	2,72,332	1,72,640	3,629	...	20,805	4,60,554	4,062	4,65,492	4,840	73,029
Midnapore Canal	1,07,554	...	1,07,554	1,03,681	103	...	22,434	2,33,772	5,040	2,28,732	4,354	11,883
Hijli Tidal Canal ... ..	...	...	...	73,750	22	...	1,505	75,266	990	74,306	642	6,314
Sone Project	9,29,010	...	9,29,010	1,05,664	2,883	1,031	36,771	10,75,265	3,853	10,71,412	4,135	90,734
	13,06,952	...	13,06,952	4,55,653	6,636	1,031	61,605	18,53,877	13,035	18,59,942	13,976	1,91,060
MINOR WORKS AND NAVIGATION.												
<i>Works for which capital and revenue accounts are kept.</i>												
Saran Project	4,318	...	4,318	...	5	...	609	4,992	...	4,992	26	80
Orissa Coast Canal ... ..	...	...	...	72,954	...	...	2,082	75,036	1,942	73,094	1,921	7,730
Calcutta and Eastern Canals.	...	...	...	3,77,692	...	...	32,682	4,09,774	403	4,09,281	5,090	25,184
Total	4,318	...	4,318	4,50,646	5	...	33,433	4,80,902	2,435	4,87,367	4,946	32,913
<i>Works for which only revenue accounts are kept.</i>												
Nadia Rivers ... ..	...	...	...	80,270	...	...	147	80,426	10	80,416	1,340	8,060
Gaighatta and Buxi Khal	...	...	...	4,500	...	...	...	4,500	36	4,464	7	45
Total ... ..	...	...	...	84,779	...	...	147	84,926	46	84,880	1,347	8,105
<i>Works for which neither capital nor revenue accounts are kept.</i>												
Edo Canal	28,333	...	28,333	...	...	...	592	28,925	300	28,725	...	...
Madhuban Canal ... ..	...	...	...	...	...	...	120	120	...	120	...	...
Total	28,333	...	28,333	...	...	...	712	29,045	300	28,845	...	...
Total Minor Works and Navigation.	32,651	...	32,651	5,43,925	5	...	34,292	6,12,773	2,681	6,10,094	6,293	41,038
GRAND TOTAL	13,41,613	...	13,41,603	9,99,478	6,041	1,031	1,17,897	24,66,650	16,616	24,50,034	20,269	2,32,098

(b) Rupees 8,399 and Rs. 915, respectively, were expended during the year on account of salaries and travelling allowances of the temporary establishment (a) Irrigation Revenue Officers specially

C.

WORKS IN BENGAL FOR THE YEAR ENDING 31st MARCH 1899.

Revenue and Working Expenses.

WORKING EXPENSES.															
MANAGEMENT.			MAINTENANCE OF WORKS.												
Management.		Total.	Establishment.				Works.	Repairs.	Sundries (suspense accounts).	Tools and plant.	Plantations.	Total direct charges.	Indirect charges.	Grand total, working expenses.	Net revenue.
Navigation.	Civil officers (a).		Direction.	Execution.	Medical.	Total.									
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
17,196	66,114	1,61,778	4,840	73,680	...	78,470	14,300	1,77,926	...	27,659	1,403	4,61,636	33,677	4,95,313	-29,721
8,601	26,076	50,810	4,358	11,383	...	15,741	10,630	1,63,563	...	23,776	143	2,61,663	2,317	2,73,980	-45,348
3,763	...	10,710	612	6,814	...	6,956	4,116	21,517	...	4,190	57	47,555	2,474	50,029	24,277
18,416	1,52,692	2,71,071	4,186	80,733	...	1,03,869	8,320	1,51,948	14	14,363	5,332	5,56,027	52,618	6,08,645	4,03,167
44,480	2,45,784	4,95,278	13,076	1,91,080	...	2,05,036	27,276	5,14,834	14	60,089	6,935	13,29,381	98,096	14,27,467	4,12,675
...	...	80	27	59	...	86	...	1,061	...	...	...	1,233	34	1,267	3,735
6,821	...	15,761	1,221	7,740	...	8,961	16,328	32,510	...	5,234	...	79,824	3,454	82,268	-9,194
40,985	...	60,708	3,690	25,125	...	28,834	2,528	1,44,378	...	20,308	757	3,06,873	12,804	2,90,677	1,22,604
47,760	...	85,635	4,947	32,934	...	37,681	19,166	1,77,940	...	25,542	757	3,46,080	17,292	3,64,222	1,32,145
22,003	...	32,453	1,340	8,050	...	9,390	...	53,611	-2,968	1,044	...	93,500	5,863	99,422	-10,006
...	...	52	7	44	...	51	...	278	...	...	...	351	14	365	4,069
22,003	...	32,526	1,347	8,094	...	9,441	...	53,880	-2,968	1,044	...	93,941	5,876	99,817	-5,937
...	...	...	9,496	...	...	9,496	8,102	21,366	...	397	...	20,390	...	20,390	-10,055
...	...	...	2,610	...	...	2,610	34	6,882	...	43	...	9,500	...	9,500	-9,449
...	...	...	12,103	...	...	12,103	6,126	22,208	...	440	...	48,949	...	48,949	-20,104
70,840	...	1,18,170	14,890	41,090	...	56,467	27,302	2,60,106	-2,968	27,026	757	4,99,840	22,168	5,12,008	27,104
1,15,206	2,45,754	6,13,446	22,375	2,22,000	...	2,44,443	64,876	7,74,960	-2,954	97,014	7,692	18,19,201	1,21,254	19,40,455	5,09,679

employed in collection of revenue.

consisting of *amiladars*, *muharrirs* and *patols*, employed for the supervision and management of irrigation and collection of revenue from the *Eken Canals*.

IIC.

STATEMENT SHOWING THE FINANCIAL RESULTS OF IRRIGATION WORKS IN BENGAL
FOR 1898-99, BASED ON ACTUAL RECEIPTS.*Principal Results of Operations for the year ended 31st March 1899.*

IRRIGATION WORKS.	Direct and indirect outlay to end of 1898-99.	Gross receipts, direct and indirect, from all sources.	Working expenses, direct and indirect.	Net revenue (excluding charges for interest).	Percentage of net revenue on capital outlay to end of the year.	Interest at 4 per cent. on direct capital at commencement of year and 2 per cent. on outlay during the year.	SURPLUS REVENUE AFTER PAYING INTEREST ON DIRECT CAPITAL OUTLAY.		EXCESS CHARGES INCLUDING INTEREST ON DIRECT CAPITAL OUTLAY.	
							Amount.	Percentage on total sum at charge.	Amount.	Percentage on total sum at charge.
1	2	3	4	5	6	7	8	9	10	11
MAJOR IRRIGATION WORKS.	Rs.	Rs.	Rs.	Rs.		Rs.	Ru.	Rs.	Rs.	
<i>In operation.</i>										
Hijili Tidal Canal ...	20,15,242	74,306	50,029	24,277	09	1,02,069	...	...	77,792	2-97
<i>In progress.</i>										
Orissa Project ...	2,63,73,151	4,65,492	4,95,213	-29,721	deficit 11	10,34,180	...	...	10,59,901	4-09
Midnapore Canal ...	84,65,427	2,28,732	2,73,581	-45,248	deficit 53	3,81,230	...	...	3,76,478	4-45
Sone Project ...	2,67,60,498	10,71,412	6,03,245	4,63,167	1-73	10,34,349	...	...	5,71,182	2-13
Total ...	6,42,14,818	18,39,912	14,27,437	4,11,475	64	24,97,828	...	...	20,55,853	3-25
MINOR WORKS AND NAVIGATION.										
<i>In operation.</i>										
Saran Project ...	7,21,588	4,992	1,257	3,735	52	...	...	...	...	...
Calcutta and Eastern Canals.	64,61,252	4,09,281	2,89,677	1,21,604	1-59	...	...	...	...	...
Nadia Rivers ...	...	89,415	99,422	-10,005	...	...	...	...	...	...
<i>In progress.</i>										
Orissa Coast Canal ...	45,32,412	73,04	82,248	-9,194	deficit 20	...	...	...	...	...
Gaighatta and Buxi Khal.	...	4,461	895	4,069	...	...	...	...	...	...
<i>Abandoned or held in abeyance.</i>										
Tirhut Project ...	6,06,075	...	...	...	...	...	...	...	...	...
Damodar ...	1,55,380	...	...	...	...	...	...	...	...	...
Total ...	1,24,76,707	5,81,247	4,64,039	1,17,268	...	...	...	...	...	...

IIIC.

DEMANDS AND REALIZATIONS DURING THE YEAR 1898-99.

	Balance of demands unrealized at com- mencement of the year.	Demands of the year.	Total.	Deduct remissions not including cash refunds.	Net total.	Deduct amount un- realized at end of the year.	Actual receipts of the year.
1	2	3	4	5	6	7	8
<i>Major Irrigation Works.</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Orissa Project ...	664	4,70,363	4,71,027	1,473	4,69,554	...	4,69,554
Midnapore Canal ...	3,518	2,33,559	2,42,077	2,587	2,39,490	5,718	2,33,772
Hijili Tidal Canal ...	...	75,286	75,286	...	75,286	...	75,286
One Project ...	1,475	10,76,753	10,78,228	2,963	10,75,265	...	10,75,265
Total ...	5,657	18,60,961	18,66,618	7,023	18,59,595	5,718	18,53,877
<i>Minor Works and Navigation.</i>							
Orissa Project ...	6,786	(a) 674	7,460	...	7,460	2,468	4,992
Orissa Coast Canal ...	...	75,036	75,036	...	75,036	...	75,036
Calcutta and Eastern Canals ...	...	4,09,774	4,09,774	...	4,09,774	...	4,09,774
India Rivers ...	...	89,426	89,426	...	89,426	...	89,426
Highatta and Buxi Khal ...	...	4,500	4,500	...	4,500	...	4,500
Total ...	6,786	5,79,410	5,86,196	...	5,86,196	2,468	5,83,728
GRAND TOTAL ...	12,443	24,40,371	24,52,814	7,023	24,45,791	8,186	24,37,605

NOTE.—Refunds of revenue have not been deducted from the actual receipts of the year.
(a) Miscellaneous collections.—There was no assessment of water-rates during the year.

IV

STATEMENT SHOWING THE FINANCIAL RESULTS OF IRRIGATION WORKS IN BENGAL

Principal results of operations for

IRRIGATION WORKS.	Capital outlay (direct and indirect) to end of the year.	REVENUE ASSESSED				
		DIRECT ASSESSED				
		Occupier's rate (water-rates).	Owner's rate.	Plantations.	Water-power.	Navigation.
1	2	3	4	5	6	7
MAJOR IRRIGATION WORKS.		Rs.	Rs.	Rs.	Rs.	Rs.
Orissa Project ...	2,63,73,151	2,70,272	...	3,628	...	1,67,807
Midnapore Canal ...	84,65,427	1,12,341	...	103	...	1,04,528
Hijili Tidal Canal ...	26,15,242	...	...	22	...	73,750
Sone Project ...	2,67,60,498	9,38,607	...	2,883	1,031	1,05,087
Total Major Irrigation Works ...	6,42,14,318	13,21,220	...	6,636	1,031	4,51,181
MINOR WORKS AND NAVIGATION.						
<i>Works for which Capital and Revenue accounts are kept.</i>						
Saran Project ...	7,21,588	...	...	5	...	...
Orissa Coast Canal ...	45,32,412	...	...	...	...	72,954
Calcutta and Eastern Canals ...	64,61,252	...	...	...	...	3,77,092
Total ...	1,17,15,252	...	...	5	...	4,50,046
<i>Works for which only Revenue accounts are kept.</i>						
Nadia Rivers ...	...	...	...	...	...	89,279
Gaighatta and Buxi Khal ...	...	...	...	...	...	4,500
Total ...	...	...	...	...	...	93,779
<i>Works for which neither Capital nor Revenue accounts are kept.</i>						
Eden Canal ...	...	33,876	...	...	...	...
Madhuban Canal ...	...	...	...	...	...	...
Total ...	...	33,876	...	...	...	...
Total Minor Works & Navigation		33,876	...	5	...	5,43,800

(a) Exclusive of Rs. 4,318 on account of ...
N.B.—The assessed revenue means the revenue assessed on the irrigation of the year independently of whether the demand statements ...

FOR THE YEAR ENDED 1998-99, BASED ON ASSESSMENTS OF THE YEAR.

the year ended 31st March 1899.

DURING THE YEAR.

REVENUE.		Refunds of re-venue.	Gross assessed re-venue,—less re-funds.	Indirect revenue—Land revenue due to operations of canals.	Grand total.	Working expenses, direct and indirect.	Net assessed revenue of the year.	Percentage on capital outlay to end of the year.
Miscellaneous.	Total.							
8	9	10	11	12	13	14	15	16
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
20,895	4,62,602	4,062	4,58,540	...	4,58,540	4,95,213	(—)36,673	deficit. 0.13
22,434	2,39,406	5,040	2,34,366	...	2,34,366	2,73,980	(—)39,614	deficit. 0.46
1,505	75,286	930	74,306	...	74,306	50,029	(+)24,277	profit. 0.92
36,771	10,84,379	3,853	10,80,526	...	10,80,526	6,08,245	(+)4,72,281	profit. 1.76
81,605	18,61,673	13,935	18,47,738	...	18,47,738	14,27,467	4,20,271	profit. 0.65
669	(a) 674	...	674	...	674	1,257	(—)583	deficit. 0.08
2,082	75,036	1,942	73,094	...	73,094	82,288	(—)9,194	deficit. 0.20
32,682	4,09,774	493	4,09,281	...	4,09,281	2,80,677	(+)1,28,604	profit. 1.99
35,433	4,85,484	2,435	4,83,049	...	4,83,049	3,64,222	1,18,827	profit. 1.01
147	89,426	10	89,416	...	89,416	99,422	(—)10,006	...
...	4,500	36	4,464	...	4,464	395	+4,069	...
147	93,926	46	93,880	...	93,880	99,817	(—)5,937	...
592	34,468	200	34,268	...	34,268	39,380	(—)5,112	...
120	120	...	120	...	120	9,569	(—)9,449	...
712	34,588	200	34,388	...	34,388	48,949	(—)14,561	...
36,292	6,13,998	2,681	6,11,317	...	6,11,317	5,12,988	98,329	...

ation of water-rates.

ated within the year or not. The actual amount of the demand statements issued during the year is given in column 3 of Table IIC.

ID.

STATEMENT OF TRAFFIC ON CANALS IN BENGAL DURING THE YEAR 1898-99.

PARTICULARS.	Orissa Canals.	Midnapore Canal.	Hijili Tidal Canal.	Sone Canals.	Calcutta and Eastern Canals.	Orissa Coast Canal.	Total.	Nadia Rivers.
1	2	3	4	5	6	7	8	9
Length of canal open for navigation ... Miles	204½	72	29	218½	737	102½	1,363½	470½
RECEIPTS.								
Tollage—Private boats ... Rs.	1,28,227	1,00,945	73,229	86,591	3,71,876	71,480	8,32,348	88,796
" Government boats ... "	...	...	...	...	...	...	...	...
" Rafts ... "	8,090	2,736	168	6,460	218	1,161	18,833	524
Carrying opera- } Govern- tions or trans- } ment port services. } boats.	36,332	...	...	12,512	...	...	48,844	...
Fines and sundries ... "	...	*7,278	962	...	4,998	313	12,951	19
Total receipts ...	1,72,649	1,10,939	73,759	1,05,563	3,77,092	72,954	9,12,976	89,279
Maintenance charges, in- cluding special navigation establishment ... "	28,360	16,242	51,009	36,864	2,81,170	84,230	4,97,875	99,432
Net revenue of year ...	1,44,289	94,717	22,750	68,699	95,922	(—)11,276	4,15,101	(—)10,163
Total number of boats ply- ing cargo ... No.	13,357	15,268	10,056	5,940	74,466	6,717	125,804	16,672
Ditto ditto passenger ... "	1,664	12,733	1,329	707	6,568	2,651	26,642	19,047
Ditto ditto empty boats ... "	11,007	8,266	6,309	3,419	(a)32,362	6,625	67,978	(b)8,395
Total ...	26,028	36,267	17,694	10,066	113,386	15,993	219,424	44,114
Total registered tonnage of boats by canal measure- ment, cargo ... Tons	220,539	261,137	172,623	128,663	707,274	98,728	1,578,944	592,283
Ditto ditto passenger ... "	64,723	67,881	18,907	12,462	7,185	33,860	206,018	80,165
Ditto ditto empty boats ... "	71,919	66,861	37,776	22,741	218,702	84,757	442,758	64,535
Total ...	357,181	376,879	229,306	163,866	933,161	167,345	2,226,738	686,983
Ton-mileage—Up ... Tons	5,764,756	2,864,094	1,602,008	4,128,670	1,068,352	2,045,290	17,463,170	} Nil
Ditto —Down ... "	5,908,262	3,526,705	2,713,866	3,814,850	7,169,085	2,594,862	25,717,630	
Total ... "	11,673,018	6,390,799	4,315,874	7,943,520	8,217,437	4,640,152	43,180,800	Nil
Estimated value of cargo— Up ... Rs.	54,90,168	61,19,709	20,52,112	31,13,557	46,77,934	14,23,472	2,28,76,352	62,69,043
Down ... "	42,35,879	49,29,272	32,48,352	42,33,893	4,44,19,221	17,96,074	6,28,62,791	1,00,97,809
Total ...	97,26,047	1,10,48,981	53,00,464	73,47,550	4,90,96,555	32,19,546	8,57,39,143	1,63,66,852
Number of passengers—Total No.	88,320	218,181	28,431	61,226	45,623	48,437	480,218	61,119
Rafts, feet x feet x feet—Up c. ft.	261,203	9,527	20,129	2,301	25,842	5,991	324,992	270
" " " Down ... "	885,719	234,331	2,751	2,139,272	20,341	60,602	3,343,016	247,677
Total ... "	1,146,921	243,858	22,880	2,141,573	46,183	66,593	3,668,008	247,947
Estimated value of rafts— Total ... Rs.	3,57,867	1,24,794	12,826	2,23,265	78,125	52,916	8,49,793	62,588
Tollage on boats per ton per mile ... Pies	2·1	0·03	3·25	4·82	8·69	2·96	...	Nil
Tollage on rafts per 100 cubic feet ... Rs.	0·71	1·12	0·73	2·09 annus.	0·47	1·74	...	0·21

* Koyal reef. Examiner has included this amount with "Miscellaneous Receipts."

(a) Inclusive of 102 rafts.

(b) Ditto of 314 steamers, 97 flats and 270 rafts.

IID.

DESCRIPTION AND QUANTITIES OF GOODS, &c., CARRIED ON CANALS IN BENGAL DURING THE YEAR 1898-99.

[illegible]

III—concluded.

DESCRIPTION AND QUANTITIES OF GOODS, &c., CARRIED ON CANALS IN BENGAL DURING THE YEAR 1898-99.

[illegible]

IE.

STATEMENT OF AREAS IRRIGATED BY IRRIGATION WORKS IN BENGAL DURING THE YEAR 1898-99.

NAME OF CANAL.	AREAS IRRIGATED IN ACRES.								AVERAGE DISCHARGE, CUBIC FEET PER SECOND.				AREAS IRRIGATED PER CUBIC FOOT PER SECOND.			
	Kharif.	Rabi.	Total.	Flow.	Lift.	DOUBLE-CROPPED.		AT HEAD.		UTILIZED.		DISCHARGE AT HEAD.		UTILIZED.		
						Area irrigated.	Per-centage of total area.	Kharif.	Rabi.	Kharif.	Rabi.	Kharif.	Rabi.	Kharif.	Rabi.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
ORISSA CANALS.																
Mahanadi Canal and its branches	73,750	621	74,371	74,371	...	...	...	1,117	479	1,031	342	66	...	71	...
ditto ditto	51,140	35	51,175	51,175	...	...	...	760	275	653	100	...	...	...	...
Left Level Canal, Range I...	22,211	21	22,232	22,232	...	...	...	800	129	153	12	74	...	145	...
Total Mahanadi Series	147,101	677	147,778	147,778	...	...	...	2,178	683	1,837	454	68	...	81	...
Right Level Canal, Range II	2,995	186	3,181	3,181	...	...	...	35	...	...	...	86	...	86	...
ditto ditto III	20,038	210	20,248	20,248	...	...	...	258	14	238	14	122	...	122	...
ditto ditto IV	10,024	4,010	14,034	14,034	...	...	...	113	20	90	23	94	...	118	...
Total Brahmini-Byturni Series...	42,037	4,412	47,069	47,069	...	...	...	366	40	363	57	110	...	118	...
Total Orissa Canals	189,759	5,089	194,847	194,847	...	...	...	2,562	923	2,200	491	74	...	80	...
MIDNAPORE CANAL.																
Midnapore Weir	62,950	...	62,950	62,950	...	...	...	144'90	84'38	115'01	56'146	434'25	...	517'34	...
ditto ditto	6,364	4,100	10,564	10,564	...	...	...	23'34	44'07	17'71	21'785	273'05	94'39	301'04	100'95
ditto ditto	1,397	...	1,397	1,397	...	...	...	...	...	...	...	...	...	...	...
Total Midnapore Canal	70,711	4,100	74,901	74,901	...	...	...	...	...	...	...	...	...	...	...
ditto ditto	20,018	739	20,757	...	...	...	...	348'90	112'23	188'61	27'53	63'16	6'38	145'05	20'84
SOME CANALS.																
Sone Main Canal Series	75,400	11,520	86,920	86,920	1,047	...	...	1,216	965	829	137	69'08	11'04	91'06	48'63
ditto ditto	229,238	38,509	267,797	267,797	10,174	...	...	5,018	2,002	2,060	1,184	76'04	32'08	110'33	83'20
Total Sone Canals	304,778	110,035	414,813	414,813	11,221	...	...	4,231	3,967	2,888	1,491	72'08	27'80	106'17	77'44
Canals were closed during the year																

Canals were closed during the year.

Exclusive of 25,983 acres of hot-weather irrigation consisting of 25,127 acres flow irrigation and 856 acres lift irrigation.
 Not filled in by Superintending Engineer as the areas of rabi were very small.

IIE.

STATEMENT SHOWING THE INCIDENCE OF WORKING EXPENSES AND ASSESSED WATER-RATES ON CANALS IN BENGAL DURING 1898-99.

NAME OF CANAL.	Average discharge of the year at canal head in cubic feet per second.	WATER-RATES ASSESSED DURING 1898-99.					Gross assessed revenue from all sources.	Working expenses, direct and indirect.	Acres irrigated during the year.	WORKING EXPENSES.			OCCUPIER'S RATES. WATER-RATES.		TOTAL WATER RATES, DIRECT AND INDIRECT.	
		Occupier's rates (water-rates).	Owner's rates.	Total direct.	Indirect.	Total of direct and indirect.				Per cent. on gross revenue.	Per acre irrigated.	Per cubic foot per second of discharge.	Per acre irrigated.	Per cubic foot per second of discharge.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
IRRIGATION WORKS.																
Canals		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Acres.	Rs.						
Project Canal	1,453	2,70,272	...	2,70,272	...	2,70,272	4,58,540	4,05,213	104,847	107'99	2'04	340'63	1'38	186'01	1'38	186'01
Project Canal	90'21	1,12,341	...	1,12,341	...	1,12,341	2,81,886	2,73,080	74,001	116'00	3'65	3,037'13	1'30	1,245'33	1'30	1,245'33
Project Canal	3,000	9,38,607	...	9,38,607	...	9,38,607	10,80,626	6,08,215	440,706	60'29	1'38	202'34	2'13	312'24	2'13	312'24
Total	...	13,21,220	...	13,21,220	...	13,21,220	16,47,738	14,27,467	710,544	77'25	1'94	...	1'85	...	1'85	...
WORKS AND NAVIGATION.																
Project Canal	...	...	...	...	...	...	674	1,287	Nil	188'49	Nil	...	...	...	...	...
Project Canal	...	...	...	...	...	...	78,134	82,288	...	112'57	...	...	...	...	...	...
Project Canal	...	...	...	...	...	...	4,61,281	2,80,677	...	62'57	...	...	...	...	...	...
Project Canal	...	...	...	...	...	...	81,416	90,422	...	111'19	...	...	...	...	...	...
Project Canal	...	...	...	...	...	...	4,464	395	...	8'84	...	...	...	...	...	...
Project Canal	161'07	83,876	...	83,876	...	83,876	34,208	30,380	29,767	114'01	1'33	217'48	1'14	187'08	1'14	187'08
Project Canal	...	...	...	...	...	...	120	9,580	...	7,974'17	...	...	...	...	...	...
Total	...	83,876	...	83,876	...	83,876	6,11,317	5,12,088	20,767	83'91	...	...	...	...	...	...
Side A - ...																

Note A.—In this table the water-rates shown as assessed during the year are the amounts for which occupiers have rendered themselves liable in return for canal supplied during the year, and include some demands which were not legally recoverable, and others of which the assessment papers were not completed till after the year.

Note B.—Refunds of revenue have been deducted from "Gross assessed revenue from all sources."

III.

STATEMENT OF QUANTITY AND VALUE OF CROPS IRRIGATED IN BENGAL DURING THE YEAR 1898-99.

Description.	ORISSA CANALS.		MIDNAPORE CANAL.		EDEN CANAL.		SONE CANALS.		SARAN CANALS.		Total.	
	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.	Area irrigated.	Estimated value.
1	2	3	4	5	6	7	8	9	10	11	12	13
Gardens and orchards	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
Sugarcane	196	29,400	...	...	485*	69,375*	132	12,248	...	...	813	1,11,023
Wheat	624	93,600	...	...	143	21,450	61,597†	16,96,596	...	...	62,364	18,11,646
Barley	9	360	...	...	...	...	21,681	4,95,560	...	...	21,690	4,95,920
Rice	...	...	...	...	...	...	15,866	4,05,887	...	...	15,866	4,05,887
Maize	193,679	69,72,444	74,901	19,34,946	29,129	14,99,575†	293,953	91,03,123	...	...	591,662	1,95,10,094
Cereals	...	...	...	...	...	...	...	...	...	...	...	...
Juar	...	...	...	...	...	...	...	...	...	...	...	...
Cheena	...	...	...	...	...	...	...	...	...	...	...	...
Miscellaneous	...	...	...	...	...	...	...	...	...	...	...	...
Gram	...	...	...	...	...	...	...	...	...	...	...	...
Peas	...	...	...	...	...	...	...	...	...	...	...	...
Miscellaneous	...	...	...	...	...	...	...	...	...	...	...	...
Fodder crops	...	5,700	...	...	...	...	...	...	...	...	...	...
Fibres	...	3,150	...	...	...	...	...	...	...	...	...	...
Dyes	...	...	...	...	...	...	...	...	...	...	...	...
Drugs	...	...	...	...	...	...	...	...	...	...	...	...
Oil-seeds	...	...	...	...	...	...	...	...	...	...	...	...
Miscellaneous	...	...	...	...	...	...	...	...	...	...	...	...
Hot-weather irrigation	...	...	...	...	...	...	...	...	...	...	...	...
Land surreptitiously irrigated	...	...	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL	194,847	71,04,804	74,901	19,34,946	29,757	15,90,400	440,796	1,31,65,003	...	...	740,301	2,37,95,153

* 455 acres of potato and 27 acres of onion; value Rs. 68,700 and Rs. 675, respectively.

† Includes price of straw at Rs. 5 per acre.

‡ The area given under "sugarcane" represents the total area irrigated in all three seasons, that is, it is the area irrigated in the khurif, plus the area irrigated in the rabi, plus the area irrigated in the hot-weather season, so that if a particular field has been irrigated in all three seasons, it appears three times in the total. In calculating the value of this crop, the rate has been taken at one third of the full value of an acre of crop.

As sugarcane is the only crop for which canal water is taken during the hot-weather season, the irrigation during that season may be accepted with accuracy as the area of sugarcane irrigated as one crop. The areas irrigated in the several Divisions are given below:—

Division	Area irrigated.	Estimated value.
Eastern Sone
Western Sone
Grand Total

IVE.
COMPARATIVE STATEMENT OF IRRIGATION AND RAINFALL FOR THE YEARS 1898-99 AND 1897-98.

Civil District.	OF THE CIVIL DISTRICT.			WORKS SUPPLYING IRRIGATION.		Culturable area commanded by the irrigation works in column 6, in acres.	Area at present estimated as annually irrigable by the works specified in column 6.	AREA IRRIGATED IN ACRES.						RAINFALL, INCHES.	
	Total area in acres.	Culturable area in acres.	Cultivated area in acres.	No.	Name.			1897-98.			1898-99.			1897-98.	1898-99.
								Kharif.	Rabi, inclusive of hot-weather.	Total.	Kharif.	Rabi, inclusive of hot-weather.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ORISSA CIRCLE.															
Cuttack ...	2,469,300		1,357,990	I II III IV V	ORISSA CANALS. Taldanda Canal and branches. Kendrapara Canal and branches. High Level Canal, Range I Ditto ditto II Jajpur Canal ...	172,336 212,650 48,815 10,000 70,000	73,810 107,360 38,440 10,000 38,500	50,256 74,128 21,987 2,996 10,087	48 1,688 65 217 4,932	50,804 75,811 22,052 3,243 14,959	51,140 73,750 22,211 2,995 10,624	35 621 21 186 4,016	51,175 74,371 22,232 3,181 14,640	53-66 59-23 50-20 49-73 ...	53-73 57-62 52-39 59-97 ...
Total Cuttack district	2,469,300	...	1,357,990			513,890	263,110	159,434	6,975	166,409	160,720	4,879	165,599	...	...
Balasore ...	1,200,000	...	566,000	VI	High Level Canal, Range III.	57,500	40,640	29,163	40	29,193	29,038	210	29,248	47-62	63-62
Total Orissa Circle ...	3,669,300	...	1,923,990			571,300	303,750	188,587	7,015	195,602	189,758	5,089	194,847	...	...
SONE CIRCLE.															
Gaya ...	3,015,680	...	2,356,000	I	Patna Canal ...	170,857	168,405	37,485	6,988	44,473	39,125	6,894	46,019	53-49	54-59
Patna ...	1,328,540	...	1,038,000	II	Ditto ...	146,450	142,635	35,817	9,716	45,033	36,365	8,094	44,459	55-06	60-87
Shahabad ...	2,800,000	...	2,187,500	III IV	Arrah Canal ... Buxar Canal ...	493,089 553,908	329,527 377,833	133,053 93,206	70,024 47,656	203,077 140,832	136,794 92,491	64,986 56,064	201,760 146,558	...	...
Total Shahabad district.	2,800,000	...	2,187,500			1,036,995	707,360	226,259	117,680	343,939	229,288	121,030	350,318	51-91	52-56
Total Sone Canals ...	7,144,320	...	5,581,500			1,354,302	1,016,400	299,061	134,324	433,445	304,778	136,018	440,786	...	...
Saran ...	1,697,920	...	1,326,500	V	Saran Canals ...	50,000	30,600	1,187	365	1,552	Canals were closed.			51-17	55-93
Total Sone Circle ...	8,842,240	...	6,908,000			1,404,302	1,046,400	300,248	134,749	434,997	304,778	136,016	440,796	...	...

IVE—concluded.

COMPARATIVE STATEMENT OF IRRIGATION AND RAINFALL FOR THE YEARS 1898-99 AND 1897-98—concluded.

CIVIL DISTRICT.	OF THE CIVIL DISTRICT.			WORKS SUPPLYING IRRIGATION.		Culturable area com- manded by the irrigation works in column 6, in acres.	Area at present esti- mated as annually irrigable by the works specified in column 6.	AREA IRRIGATED IN ACRES.						RAINFALL, INCHES.	
	Total area in acres.	Culturable area in acres.	Cultivated area in acres.	No.	Name.			1897-98.			1898-99.			1897-98.	1898-99.
								Kharif.	Rabi, inclusive of hot- weather.	Total.	Kharif.	Rabi, inclusive of hot- weather.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SOUTH-WESTERN CIRCLE.															
Midnapore ...	3,292,800	2,111,500	1,869,100	{ I II	Under Midnapore Weir ... Under Panskura Weir ...	98,000	65,000	64,002	...	64,002	62,950	...	62,950	55·33	59·18
Total Midnapore dis- trict.	3,292,800	2,111,500	1,869,100			25,200	8,000	7,472	...	7,472	6,394	4,160	10,554	40·89	48·14
Hooghly ...	1,087,360	632,680	454,700	III	Tidal Reaches, Ranges I and II.	123,200	73,000	71,474	...	71,474	69,344	4,160	73,504	...	...
Total Midnapore Canal.	4,380,160	2,744,160	2,323,800	IV V	Eden Canal ... Ditto ...	7,200	2,000	732	...	732	1,397	...	1,397	...	...
Burdwan ...	1,726,080	...	1,283,800			130,400	76,000	72,206	...	72,206	70,741	4,160	74,901	...	...
Hooghly ...	1,087,360	...	702,300			65,000	85,000	17,557	520	18,077	19,938	441	20,379	62·88	72·14
Total Eden Canal ...	2,813,440	...	1,986,100			36,000	26,000	6,083	827	6,410	9,080	298	9,378	53·53	48·64
Total South-Western Circle.	7,193,600	...	4,308,900			100,000	60,000	23,640	847	24,487	29,018	739	29,757	...	...
GRADED TOTAL ...	19,706,140	...	13,141,890			230,400	135,000	95,846	847	96,093	99,759	4,899	104,658	...	...
						2,206,002	1,486,150	584,681	142,611	727,392	694,895	146,006	740,301	...	...

No. IF.

STATEMENT SHOWING THE WATER-RATES PER ACRE IN FORCE ON CANALS IN BENGAL DURING 1898-99.

CANALS.	Rates.	Different sorts of leases and crops on which the water-rates are charged.	WATER-RATES PER man.	
			Flow.	Lift.
1	2	3	4	5
ORISSA CANALS		<i>Long Leases.</i>	Rs. A. P.	Rs. A. P.
		I For water supplied on a long-term lease between the 16th June and 30th November ...	1 8 0	1 8 0
		For a term of 7 years for each season.		
		II For water supplied on a provisional license for which a permit for a term of years is not subsequently issued ...	3 0 0	3 0 0
		III Provided that the rate for leases, whether new or renewals, required for shorter terms than seven years in order to develop the system of block, as per Rule 7 (III), shall be charged	1 8 0	1 8 0
		IV <i>Beali</i> lands included in a long lease are not exempted from assessment, but no charge will be made for water supplied to them in the <i>rabi</i> season, that is, up to 25th March.		
		V Low-lying lands included in leases for a term of years which require irrigation only in years of drought ...	0 8 0	0 8 0
		<i>Season leases.</i>		
		I For water supplied for irrigation of rice between the 16th of June and 30th of November ...	3 0 0	3 0 0
		II For water supplied for irrigation of <i>dalca</i> rice ...	1 8 0	1 8 0
SCHEDULE ...		III For water supplied for irrigation of cotton, tobacco, <i>huldi</i> , ginger, wheat, vegetables, indigo and garden produce	1 8 0	1 8 0
		IV For water supplied for irrigation of lin-seed, oil-seed and all pulses ...	1 0 0	1 0 0
		V For water supplied for irrigation of sugarcane ...	5 0 0	5 0 0
		VI For filling tank or for manufacturing purposes per 10,000 cubic feet of water-supply, also for filling tanks without authority or using water in an unauthorized manner ...	1 0 0	1 0 0
		VII For water supplied for the irrigation of sugarcane between 1st April and 15th June ...	3 8 0	3 8 0
		VIII When water can only be supplied for a part of the above season, for each watering ...	1 5 0	1 5 0

SOUTH-WESTERN CIRCLE.

For the Rice Crop.

For water supplied between 16th June and 30th November—whether by flow or lift—

		Rs. A. P.	
MIDNAPORE CANAL.	For five-year leases ...	1	8 0 per acre for each season.
	For one-year lease or for water supplied on a provisional license for which a permit for a term of years is not subsequently issued ...	3	0 0 per acre.
	Provided that the leases, whether new or renewals, required for shorter terms than five years in order to develop the system of blocks, shall be charged	1	8 0 per acre.
	If water is available after the long leases have been irrigated, leases for a single watering may be given at ...	0	8 0 per acre, the rate being payable in advance.

For Winter Crops.

For supply of water, when available ...	2	8 0 per acre or per season.
For unauthorized use of canal water ...	5	0 0 per acre or such less rate as may be sanctioned by the Deputy Collector.

For supply of water for manufacturing or other purposes Re. 1 to be charged for each 10,000 cubic feet or part of 10,000 cubic feet supplied.

The same charge will be made if water is taken into a tank without authority, or used in an unauthorized manner.

Tanks may be filled with canal water without charge wherever water can be made available without injury to the cultivation dependent on a canal under certain conditions noted in Rule 81.

		Per bigha. Rs. A. P.	
EDEN CANAL.	I.—Long leases commencing from 1st June of the year in which they are executed and extending for seven years, per season	0	5 0
	II.—Season leases, <i>kharij</i> , per season ...	0	8 0
	III.—Single waterings outside the area commanded, each watering ...	0	4 0
	IV.—Season leases, <i>rabi</i> , sugarcane and potatoes and other crops, per season ...	1	0 0
	<i>Boro</i> rice, onions, brinjals and other country vegetables, per season ...	0	8 0
	V.—Unauthorized irrigation—		
	<i>Kharij</i> season ...	1	0 0
	<i>Rabi</i> season ...	2	0 0

or such lower rates as may be fixed by the canal officer.

For supply of water for manufacturing or other purposes Re. 1 to be charged for each 10,000 cubic feet or part of 10,000 cubic feet supplied.

The same rate will be made if water is taken into a tank without authority or used in an unauthorized manner.

SONE CIRCLE.

SONE CANALS.

The following schedules are in force with reference to all leases taken during the year 1896-97 and subsequently :—

SCHEDULE No. I.

Leases for a term of years.

FOR WATER SUPPLIED BETWEEN THE 25TH OF JUNE OF ONE YEAR AND THE 25TH MARCH OF THE NEXT.	FLOW OR LIFT.	
	Rate per bigha.	Rate per tenth of a bigha.
1	2	8
For leases for seven years, all crops ...	Rs. A. P. 1 9 0	Rs. A. P. 0 2 6

Leases having a currency of seven years will be granted at the rate defined in this schedule until and including the year 1903.

SCHEDULE No. II.
Season Leases (Kharif).

	Flow or Lift.	
	Rate per bigha.	Rate per tenth of a bigha.
1	2	3
For water supplied between the 25th June and the 25th of October for all crops.	Rs. A. P. 2 3 0	Rs. A. P. 0 3 6

SCHEDULE No. III.
Season Leases (Rabi).

Time of Supply.	Locality.	Flow.		Lift.	
		Per bigha.	Per tenth of a bigha.	Per bigha.	Per tenth of a bigha.
1	2	3	4	5	6
15th October to 25th March.	Water supplied for all crops, including sugarcane from distributaries open for <i>kharif</i> irrigation.	Rs. A. P. 1 4 0	Rs. A. P. 0 3 0	Rs. A. P. 0 15 0	Rs. A. P. 0 1 6
25th October to 25th March.	Water supplied for all crops including sugarcane from distributaries or parts of distributaries from which <i>rabi</i> irrigation only is allowed.	0 15 0	0 1 6	0 10 0	0 1 0

SCHEDULE No. IV.
Season Leases (Hot-weather).

	Flow or Lift.	
	Per bigha	Per tenth of a bigha.
1	2	3
For water supplied between the 25th March and the 25th June, or at the option of the applicant, between the 25th of February and the 25th of May, for all crops.	Rs. A. P. 2 8 0	Rs. A. P. 0 4 0
When water can only be supplied for a part of the season, for each watering.	0 15 0	0 1 6

In the case of charges under Schedules I to IV, any smaller area than one-tenth of a bigha will be charged as one-tenth. The bigha contains 27,225 square feet.

SCHEDULE No. V.

For water supplied by volume in the kharif season.

For water supplied between the 1st of September and the 31st of October, four rupees for a calculated discharge of one cubic foot per second for twelve hours. For less than a cubic foot per second or less than twelve hours, a proportionate charge shall be made, but a fraction of less than one-sixteenth shall be charged as one-sixteenth.

SCHEDULE No. VI.

For water supplied by volume to fill ahars.

For water supplied between the 1st November and the 25th of March, one rupee for a calculated discharge of one cubic foot per second for twelve hours. For less than a cubic foot per second or less than twelve hours, a proportionate charge shall be made, but a fraction of less than one-sixteenth shall be charged as one-sixteenth.

APPENDIX I.

ORISSA CIRCLE.

Statements showing the areas of Kharif irrigated on the Distributaries from the Orissa Canals with average discharge of season or of period of greatest demand and area per cubic foot per second on the same for the year 1898-99.

TALDANDA CANAL.

DISTRIBUTARY.				Area of kharif.	Average discharge of season.	Area per cubic foot per second on average of season.	REMARKS.
1				2	3	4	5
				Acres.	C. ft. per second.	Acers.	
No. 0	...	...	...	139	3.63	38	
No. 1	...	...	...	788	14.98	53	
No. 1½	...	...	...	431	10.63	41	
No. 2	...	...	...	692	11.93	58	
No. 3	...	...	...	999	14.00	71	
No. 4	...	...	...	730	5.47	133	
No. 5	...	...	...	646	12.03	54	
Sub-distributary at Sompur				140	2.18	67	
No. 6	...	...	...	1,608	12.73	127	
No. 7	...	...	...	603	6.65	91	
No. 8	...	...	...	1,771	15.10	117	
No. 9	...	...	...	898	13.92	65	
No. 10	...	...	...	488	6.25	78	
No. 11	...	...	...	1,071	10.37	103	
No. 12	...	...	...	5,321	48.33	110	
No. 13	...	...	...	1,447	13.82	109	
Total				17,778	201.52	00	

MACHGONG CANAL.

				Acres.	C. ft. per second.	Acres.
No. 1	Distributary with branches			588	5.74	102
No. 2	ditto	ditto	...	2,334	25.98	90
No. 3	ditto	ditto	...	478	3.90	122
No. 4	ditto	ditto	...	1,356	16.39	83
No. 5	ditto	ditto	...	1,131	13.64	83
No. 6	ditto	ditto	...	2,032	18.08	112
No. 7	ditto	ditto	...	2,886	23.90	121
No. 8	ditto	ditto	...	2,359	24.62	108
No. 9	ditto	ditto	...	1,298	9.80	132
No. 10	ditto	ditto	...	7,473	68.54	109
No. 11	ditto	ditto	...	747	10.91	69
No. 12	ditto	ditto	...	775	10.35	75
No. 13	ditto	ditto	...	4,311	32.28	134
No. 19	ditto	ditto	...	5,322	71.41	74
Total				33,390	335.54	99

KENDRAPARA CANAL.

DISTRIBUTARY.	Approximate area of <i>kharij</i> irrigated.	Average discharge of 15 days' period of greatest demand—1st to 15th September 1898.	Area per cubic foot per second on 15 days' period of greatest demand.	REMARKS.
1	2	3	4	5
	Acres.	C. ft. per second.	Acres.	
Main Canal ...	159	3.60	44	
No. 0 Distributary, and branches	755	15.73	48	
No. 1 ditto ditto ...	3,638	63.33	57	
No. 2 ditto ditto ...	539	14.26	39	
No. 3 ditto ditto ...	1,236	23.13	53	
No. 3½ ditto ditto ...	300	16.20	18	
No. 4 ditto ditto ...	4,608	82.13	56	
No. 4½ ditto ditto ...	308	6.40	48	
No. 5 ditto ditto ...	2,249	39.60	57	
No. 5½ ditto ditto ...	450	8.00	56	
No. 6 ditto ditto ...	7,846	106.93	73	
No. 6½ ditto ditto ...	88	1.73	51	
No. 7 ditto ditto ...	1,094	14.93	73	
No. 8 ditto ditto ...	14,745	244.60	60	
No. 9 ditto ditto ...	4,467	88.40	50	
No. 10 ditto ditto ...	695	13.60	44	
No. 11 ditto ditto ...	1,649	22.66	73	
No. 12 ditto ditto ...	1,063	22.93	46	
No. 13 ditto ditto ...	1,253	25.53	48	
No. 15 ditto ditto ...	1,846	22.40	82	
No. 16 ditto ditto ...	486	8.80	55	
No. 17 ditto ditto ...	611	4.26	143	
No. 18 ditto ditto ...	1,294	14.06	92	
Total ...	51,379	863.21	60	

On distributary No. 3½ the soil is very sandy, and there is great loss of water.

Distributaries 15 to 18 are in lower levels, where a small supply is sufficient under normal conditions.

GODRI CANAL.

DISTRIBUTARY.	Area of <i>kharij</i> irrigated.	Average discharge of 15 days' period of greatest demand—25th September to 10th October 1898.	Area per cubic foot per second on 15 days' period of greatest demand.	REMARKS.
1	2	3	4	5
	Acres.	C. ft. per second.	Acres.	
Main Canal ...	1,070	14.12	76	
No. 1 Distributary ...	396	6.40	60	
No. 2 ditto ...	544	12.88	42	
No. 3 ditto ...	233	4.89	49	
No. 4 ditto ...	121	6.18	20	
No. 5 ditto ...	142	6.15	23	
No. 7 ditto ...	333	7.22	46	
No. 6 ditto ...	636	9.00	70	
Total ...	3,475	66.84	52	

The very low duties on Nos. 2, 4, 5, and 7 indicate the necessity for regulation of outlets.

GOBRI EXTENSION CANAL.

DISTRIBUTARY.	Average discharge— 25th Sep- tember to 10th Octo- ber 1898.	Area under lease.	Duty in acres during period of greatest demand, assuming whole area as irrigated.	REMARKS.
1	2	3	4	5
Main Canal	8.14	700	86	In this country there is in nor- mal years very little require- ment for canal water.
No. 1 Distributary	3.56	411	117	
No. 2 ditto	6.65	922	139	
No. 3 ditto	6.38	1,587	249	

PATTAMUNDI CANAL.

	C. ft. per second.	Acres.		
No. 0 Distributary	40.00	1,807	45	The irrigation was assisted by rain- fall. The duty will re- main irregular till outlets are properly adjust- ed to areas leased.
No. 1 ditto	11.00	473	43	
No. 2 ditto	15.00	1,612	107	
No. 3 ditto	3.10	230	70	
No. 4 ditto	10.10	796	79	
No. 5 ditto	15.00	1,006	67	
No. 6 ditto	1.00	114	114	
No. 7 ditto	28.82	1,714	59	
No. 8 ditto	12.50	577	55	
No. 9 ditto	11.25	467	42	
No. 11 ditto	37.24	2,151	58	
No. 12 ditto	26.50	2,113	79	
No. 13 ditto	4.40	222	55	
No. 15 ditto	12.82	1,297	100	

HIGH LEVEL CANAL, RANGE I.

DISTRIBUTARY.	Area of <i>kharij</i> .	Average discharge of period of greatest demand.	Area per cubic foot per second on period of greatest demand.	REMARKS.
1	2	3	4	5
	Acres.	C. ft. per second.	Acres.	
Main Canal outlets ...	1,081	15.00	112	Irrigation was as- sisted by rainfall. The results re- corded are of little practical value, and indi- cate that more method is re- quired in the regulation of the supply.
No. 1 Distributary ...	3,882	62.46	62	
No. 2 ditto ...	970	11.59	84	
No. 3 ditto ...	1,512	20.69	73	
No. 4 ditto ...	639	4.99	128	
No. 4½ ditto ...	1,171	15.62	75	
No. 5 ditto ...	1,507	11.52	131	
No. 5½ ditto ...	287	2.84	101	
No. 6 ditto ...	2,212	14.09	157	
No. 7 ditto ...	377	6.91	54	
No. 7½ ditto ...	1,750	19.62	89	
No. 7¾ ditto ...	410	4.38	100	
No. 8 ditto ...	302	1.65	123	
No. 9 ditto ...	763	5.57	137	
No. 10 ditto ...	547	6.22	88	
No. 11 ditto ...	949	8.87	107	
No. 12 ditto ...	1,022	13.01	78	
No. 13 ditto ...	750	10.64	71	
No. 14 ditto ...	850	22.22	38	
No. 14½ ditto ...	44	1.64	27	
No. 15 ditto ...	47	0.72	65	
No. 16 ditto ...	140	1.61	87	
No. 17 ditto ...	251	8.81	194	
Total ...	22,193	263.67	84	

HIGH LEVEL CANAL, RANGE II.

Main Canal outlets ...	2,996	33.30	90	This shows outlets well adjusted.
Total ...	2,996	33.30	90	

HIGH LEVEL CANAL, RANGE III.

Main Canal outlets ...	7,070	107.36	66	The regulation appears to be better on this canal than on the others, though the duty from the main canal outlets is too low.
No. 2 Distributary ...	1,178	14.34	82	
No. 3 ditto ...	8,757	125.54	70	
No. 4 ditto ...	5,027	87.59	57	
No. 5 ditto ...	4,236	46.41	91	
No. 6 ditto ...	1,057	18.47	57	
No. 7 ditto ...	1,516	25.06	60	
Total ...	28,841	424.77	68	

JAIPUR CANAL.

DISTRIBUTARY.	Area of <i>kharij</i> .	Average discharge of 15 days period of greatest demand 9th to 23rd July 1898.	Area per cubic foot per second on 15 days period of greatest demand.	REMARKS.
1	2	3	4	5
	Acres.	C. ft. per second.	Acres.	
No. 1 Distributary ...	7,111	151	47	This shows bad regulation out- lets and waste of water.
No. 2 ditto ...	3,643	75	48	
Total ...	10,754	226	47.5	

APPENDIX II.

APPENDIX

80X

Working Statistics of Distributaries by Canal

EASTERN SON

[illegible]

II.

CIRCLE.

and Branches for the year 1898-99.

DIVISION.

TOTAL AREA IRRIGATED.			WORKING DUTY, IN ACRES, PER CUBIC FOOT OF WATER.			WORKING DUTY, IN ACRES, PER CUBIC FOOT OF DISCHARGE FOR PREVIOUS THREE YEARS.									Serial number of dis-tributory.	REMARKS.
						1895-96.			1896-97.			1897-98.				
Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.		
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SUBDIVISION.																
687 1,795	50 154	28 73	114 87.0	35 13.6	12 36	105 81	73 68	Nil 2	70 61	27 113	1 Nil	132 61	27 44	9 6	1 2	
2,283	204	95	201	20	48	186	81	20	121	160	1	123	71	15		
...	...	...	100	19	24	23	40	30	65	75	1	95	35	7		
161 1,747 1,574 2,187 183 1,490 5,843	21 231 251 221 ... 290 923	12 20 24 29 ... 39 132	55 94 108 77 ... 94 66	4 20 104 35 ... 42 24	4 4 17 7 ... 8 8	51 60 91 23 ... 20 68	5 42 64 21 ... 29 25	19 16 23 28 ... 14 Nil	24 25 28 28 ... 22 54	42 60 119 46 ... 27 54	15 21 29 14 ... 28 11	54 78 131 74 ... 25 80	14 30 66 45 ... 45 45	8 11 7 10 ... 11 5	1 2 3 4 5 6 7	Soils. Kewal. Do. Do. Kewal and powra. Kewal and sandy. First quarter kewal and rest sandy. Powra and sandy.
3,485 1,300 4,779 383 2,018 1,121 412 1,983 918	844 85 366 8 348 316 243 123 33	... 40 53 ... 65 ... 15 67 18	80 94 60 ... 58 53 50 87 61	78 20 ... 78 129 33 29	8 5 ... 13 ... 5 17 6	61 84 57 68 ... 73 46	53 33 21 63 ... 19 11	Nil 19 16 9 4 ... 49 11	46 35 45 43 40 37 25 25	23 30 37 17 90 127 61 23 9	28 30 2 17 23 10 8 8 Nil	25 82 67 74 50 56 68 54	14 30 66 45 77 71 161 20 10	5 4 7 8 ... 11 4	8 9 10 11 12 13 14 15 16	First half sandy and powra, second half kewal and powra. Sandy. Do. Do. Powra and kewal. Sandy and powra.
1,257 1,138 3,000	313 143 611	6 ... 125	74 81 111	75 26 73	2 ... 25	50 20 29	79 6 42	23 19 23	25 50 21	22 16 22	25 16 22	54 97 96	54 20 66	26 10 16	17 18 19	Ditto. Ditto.
25,283	5,426	775	1,208	270	129	1,034	540	276	933	967	329	1,231	853	140		
...	...	...	75	54	9	60	34	20	55	60	23	77	53	10		
SUBDIVISION.																
4,254 874 128 3,715 490	540 50 10 400 184	180 54 18 84 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
224 1,304 939 2,693 1,409 304 1,121 644 5,423 1,119 247 1,927 1,216 961 2,100 7,864	80 147 169 489 140 91 145 39 431 84 108 162 96 169 921 789	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,702 2,679 7,444 91	227 121 123 20	103 174 116 ...	65 72 51 25	26 30 45 10	18 25 39 ...	86 112 28 27	46 20 44 18	50 30 59 ...	63 71 75 29	24 45 27 20	2 44 71 27	20 105 63 41	26 80 32 28	28 26 40 14	23 24 25	
2,671	5,083	2,592	988	555	281	1,163	588	535	206	1,143	684	1,220	964	499		
...	...	...	87	29	21	83	28	45	64	28	40	97	60	26		
2,460	11,219	3,267	2,146	1,425	410	2,194	1,077	813	1,229	2,110	1,013	2,451	1,810	639		
...	...	...	71	46	15	76	26	31	61	70	25	53	61	23		

Working statistics of Distributaries by Canals and Branches for the year 1898-99.

ABRAH DIVISION.

Canal or Branch.	Serial number of distributaries.	Name of distributary.	Length of distributary connected in miles.		Estimated full capacity as designed.	Number of days distributary was in flow during season.		Average discharges utilized.		Total area irrigated. Acres.		Working duty in acres per cubic foot of discharge.		Working duty in acres per cubic foot of discharge.		Working duty in acres per cubic foot of discharge.		Serial number of distributaries.			
			Length.	Bearing.		Kharif.	Rabi.	Hot-weather.	Kharif.	Rabi.	Hot-weather.	Kharif.	Rabi.	Hot-weather.	Kharif.	Rabi.	Hot-weather.				
																			1895-96.	1896-97.	1897-98.
Arrah Canal	1	Left distributary	118	166	118	25	51	219	90	53	2,858	1,041	319	178	108	60	81	21	32	1	
	2	Right distributary	61	56	61	28	18	85	52	23	1,234	134	134	145	44	59	52	21	32	2	
	3	Mungra distributary	74	39	74	47	34	74	63	29	1,790	198	31	105	44	59	52	21	32	3	
	4	Mungra distributary	44	24	44	72	34	303	116	67	3,583	830	279	118	71	52	53	21	32	4	
	5	Narain distributary	121	90	121	83	34	103	63	46	644	607	48	63	66	41	58	21	32	5	
	6	Sukla distributary	174	141	174	103	67	325	193	66	2,930	1,044	253	180	73	59	58	21	32	6	
	7	Left parallel channel.	28	31	28	41	18	124	47	33	1,304	248	38	103	116	79	79	21	32	7	
	8	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	8	
	9	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	9	
	10	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	10	
	11	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	11	
	12	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	12	
	13	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	13	
	14	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	14	
	15	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	15	
	16	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	16	
	17	Arrah Canal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17
Total Arrah Canal			891	27,252	8,094	3,006	1,584	88	770	917	675	670	592	1,685	714
Mean duty Arrah Canal			42
No record kept of the amount of water escaped at the outlets in all along the Canal 27 miles, discharges not available.																					
NARAIN SUBDIVISION.																					
Arrah Canal	1	Left distributary	118	166	118	25	51	219	90	53	2,858	1,041	319	178	108	60	81	21	32	1	
	2	Right distributary	61	56	61	28	18	85	52	23	1,234	134	134	145	44	59	52	21	32	2	
	3	Mungra distributary	74	39	74	47	34	74	63	29	1,790	198	31	105	44	59	52	21	32	3	
	4	Mungra distributary	44	24	44	72	34	303	116	67	3,583	830	279	118	71	52	53	21	32	4	
	5	Narain distributary	121	90	121	83	34	103	63	46	644	607	48	63	66	41	58	21	32	5	
	6	Sukla distributary	174	141	174	103	67	325	193	66	2,930	1,044	253	180	73	59	58	21	32	6	
	7	Left parallel channel.	28	31	28	41	18	124	47	33	1,304	248	38	103	116	79	79	21	32	7	
	8	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	8	
	9	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	9	
	10	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	10	
	11	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	11	
	12	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	12	
	13	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	13	
	14	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	14	
	15	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	15	
	16	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	16	
	17	Arrah Canal	17
Total Arrah Canal			891	27,252	8,094	3,006	1,584	88	770	917	675	670	592	1,685	714
Mean duty Arrah Canal			42
No record kept of the amount of water escaped at the outlets in all along the Canal 27 miles, discharges not available.																					
NARAIN SUBDIVISION.																					
Arrah Canal	1	Left distributary	118	166	118	25	51	219	90	53	2,858	1,041	319	178	108	60	81	21	32	1	
	2	Right distributary	61	56	61	28	18	85	52	23	1,234	134	134	145	44	59	52	21	32	2	
	3	Mungra distributary	74	39	74	47	34	74	63	29	1,790	198	31	105	44	59	52	21	32	3	
	4	Mungra distributary	44	24	44	72	34	303	116	67	3,583	830	279	118	71	52	53	21	32	4	
	5	Narain distributary	121	90	121	83	34	103	63	46	644	607	48	63	66	41	58	21	32	5	
	6	Sukla distributary	174	141	174	103	67	325	193	66	2,930	1,044	253	180	73	59	58	21	32	6	
	7	Left parallel channel.	28	31	28	41	18	124	47	33	1,304	248	38	103	116	79	79	21	32	7	
	8	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	8	
	9	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	9	
	10	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	10	
	11	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	11	
	12	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	12	
	13	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	13	
	14	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	14	
	15	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	15	
	16	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	16	
	17	Arrah Canal	17
Total Arrah Canal			891	27,252	8,094	3,006	1,584	88	770	917	675	670	592	1,685	714
Mean duty Arrah Canal			42
No record kept of the amount of water escaped at the outlets in all along the Canal 27 miles, discharges not available.																					
NARAIN SUBDIVISION.																					
Arrah Canal	1	Left distributary	118	166	118	25	51	219	90	53	2,858	1,041	319	178	108	60	81	21	32	1	
	2	Right distributary	61	56	61	28	18	85	52	23	1,234	134	134	145	44	59	52	21	32	2	
	3	Mungra distributary	74	39	74	47	34	74	63	29	1,790	198	31	105	44	59	52	21	32	3	
	4	Mungra distributary	44	24	44	72	34	303	116	67	3,583	830	279	118	71	52	53	21	32	4	
	5	Narain distributary	121	90	121	83	34	103	63	46	644	607	48	63	66	41	58	21	32	5	
	6	Sukla distributary	174	141	174	103	67	325	193	66	2,930	1,044	253	180	73	59	58	21	32	6	
	7	Left parallel channel.	28	31	28	41	18	124	47	33	1,304	248	38	103	116	79	79	21	32	7	
	8	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	8	
	9	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	9	
	10	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	10	
	11	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	11	
	12	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	12	
	13	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	13	
	14	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	14	
	15	Left parallel channel.	31	31	31	33	18	86	19	13	570	57	33	103	60	59	52	21	32	15	
	16	Right parallel channel.	11	11	11	33	18	86	19	13	570	57	33	103	60	59	52	21	32	16	
	17	Arrah Canal	17
Total Arrah Canal			891	27,252	8,094	3,006	1,584	88	770	917	675	670	592	1,685	714
Mean duty Arrah Canal			42
No record kept of the amount of water escaped at the outlets in all along the Canal 27 miles, discharges not available.																					
NARAIN SUBDIVISION.																					
Arrah Canal	1	Left distributary	118	166	118	25	51	219	90	53	2,858	1,041	319	178	108	60	81	21	32	1	
	2	Right distributary	61	56	61	28	18	85	52	23	1,234	134	134	145	44	59	52	21	32	2	
	3	Mungra distributary	74	39	74	47	34	74	63	29	1,790	198	31	105	44	59	52	21	32	3	
	4	Mungra distributary	44	24	44	72	34	303	116	67	3,583	830	279	118	71	52	53	21	32	4	

[illegible]

Working Statistics of Distributaries by Canal
Buxar

CANAL OR BRANCH.	Serial number of distributary.	NAME OF DISTRIBUTARY.	Length of distributary constructed in miles.		Estimated full capacity as designed.	LENGTH OF DISTRIBUTARY OPEN, IN MILES, DURING SEASON.			NUMBER OF DAYS DISTRIBUTARY WAS IN FLOW DURING SEASON.			AVERAGE DISCHARGE UTILIZED.		
						Kharrif.	Rabi.	Hot weather.	Kharrif.	Rabi.	Hot weather.	Kharrif.	Rabi.	Hot weather.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			M.	Ft.		M.	Ft.	M.	Ft.	M.	Ft.			
Main Western Canal.	1	Suliya Distributary ...	3	1,300	32	3	1,300	3	1,300	3	1,300	60	43	...
	2	Newnank ditto ...	15	1,400	74	8	1,400	8	1,400	8	1,400	56	71	...
	3	Outlets in Main Western Canal				In a length of 7 miles						45	73	...
			21	2,000								Total Sikrol subdivision.		
												Mean duty, Sikrol subdivision		
Ditto ...	4	Outlets in Main Western Canal				In a length of 23 miles 2,000 feet						62	68	...
	5	Barnon Distributary ...	6	2,000	85	3	...	6	2,000	3	...	67	99	...
			6	2,000								Total Jamorur subdivision		
												Mean duty, Jamorur subdivision		
Ditto ...	6	Outlets in Main Western Canal				In a length of 5 miles 1,400 feet						122	66	...
	7	Balthari Distributary ...	16	...	187	8	...	16	...	3	...	122	166	...
	8	Khurnabad ditto ...	10	2,450	121	10	2,450	10	2,450	...	...	122	156	...
	9	Basargan ditto ...	1	2,940	35	1	2,940	1	2,940	...	...	15	156	...
			28	2,110								Total Baswan subdivision		
			46	1,480								Mean duty, Baswan subdivision		
												Total Main Western Canal		
												Mean duty, Main Western Canal		
Buzar Canal outlets	1	Buzar Canal outlets				In a length of 45 miles 1,720 feet						122	184	...
	2	Jainagra Right Parallel Channel	2	2,640	34	2	2,640	3	2,640	3	2,640	34	40	...
	3	Ditto Left ditto	2	780	32	2	780	2	780	2	780	27	45	...
	4	Sierla Left Parallel Channel	1	1,060	26	...	4,000	...	4,000	...	4,000	34	37	...
	5	Sirkhinda Right Parallel Channel	...	4,630	...	...	4,630	...	4,630	...	4,630	53	42	...
	6	Pandaria Minor Channel	2	160	...	3	160	3	160	3	160	42	16	...
	7	Bhojpur Distributary	41	4,400	293	41	4,400	41	4,400	37	3,800	109	129	...
	8	Titrahund Link Line	3	2,000	...	3	2,000	3	2,000	3	2,000	80	100	...
	9	Sanjhauli Sub-Distributary	6	...	110	6	...	5	...	...	...	27	63	...
	10	Norun Sub-Distributary	5	...	46	1	...	5	...	1	2,640	...	...	...
	11	Sirkhinda Left Parallel Channel	1	100	13	1	100	1	100	...	...	40	10	...
	12	Bhanua	7	2,640	126	...	7	2,640	...	1,500	...	...	15	...
	13	Amoithi Right Parallel Channel	1	300	13	1	300	1	300	1	300	25	49	...
	14	Barna Distributary	8	...	79	8	...	8	...	6	...	48	62	...
	15	Rampur Right Parallel Channel	3	1,760	22	3	1,760	3	1,760	3	1,760	27	67	...
	16	Ditto Left ditto	2	3,100	22	2	3,100	2	3,100	2	3,100	24	34	...
	17	Santh Distributary	16	4,000	548	16	4,000	16	4,000	10	...	79	123	...
	18	Gurha Sub-Distributary	9	2,000	230	9	2,000	9	2,000	3	...	48	44	...
	19	Obamilla ditto	6	2,040	86	6	2,040	6	2,040	5	600	45	62	...
	20	Amarpur ditto	5	...	73	5	...	5	...	3	...	30	47	...
	21	Natwar Right Parallel Channel	3	...	34	3	...	3	...	3	...	46	26	...
	22	Ditto Left ditto	3	...	34	3	...	3	...	3	...	43	15	...
	23	Gunsai Right Parallel Channel	2	600	34	2	600	2	600	2	600	43	68	...
	24	Ditto Left ditto	...	1,400	...	...	1,400	...	2,400	...	...	...	...	...
	25	Charanty Right Parallel Channel	2	...	22	2	...	2	...	3	...	36	12	...
	26	Rasooli Distributary	7	...	73	7	...	7	...	7	...	75	80	...
	27	Sikrol Right Parallel Channel	2	1,320	10	2	1,320	2	1,320	2	1,320	21	67	...
	28	Ditto Left ditto	2	230	5	2	230	2	230	2	230	21	99	...
	29	Bhukha Right Parallel Channel	2	1,760	34	2	1,760	2	1,760	2	1,760	53	96	...
	30	Ditto Left ditto	1	700	1	1	700	1	700	1	700	33	19	...
	31	Rasudhar Distributary	3	3,150	41	3	3,150	3	3,150	3	3,150	46	77	...
	32	Mahadah Right Parallel Channel	4	845	26	4	845	4	845	4	845	26	61	...
	33	Itarhi Distributary	3	...	48	3	...	3	...	3	1,000	7	9	...
	34	Mahadah ditto	7	3,138	73	7	3,138	7	3,138	1	...	37	64	...
	35	Jail Channel	3	260	10	3	260	3	260	3	260	121	162	...
	36	Saripur Parallel Channel	1	2,600	6	1	2,600	1	2,600	...	...	...	...	...
			177	1,693								Total Buzar Canal		
												Mean duty, Buzar Canal		
Chowwa Branch.	1	Chowwa Branch Canal	30	2,124	683	30	2,124	30	2,124	23	...	113	131	...
	2	Gauri Shanker Tola Channel	...	3,268	...	...	3,268	...	3,268	...	3,268	48	27	...
	3	Koenus Distributary	16	3,060	186	3	3,060	18	3,060	...	...	43	117	...
	4	Indore ditto	10	...	110	...	...	10	...	...	...	...	15	...
	5	Bhanpur ditto	3	4,000	20	3	4,000	3	4,000	2	4,000	...	...	...
	6	Khur ditto	16	...	100	16	...	14	...	...	...	103	34	...
	7	Unnas ditto	11	1,220	133	11	1,220	11	1,220	...	...	60	104	...
	8	Atrana ditto	12	...	270	12	...	12	...	...	...	82	96	...
	9	Sir-nath Sub-Distributary	4	1,320	70	3	3,300	4	1,320	...	...	65	27	...
	10	Itawa Distributary	3	3,600	100	3	1,320	3	2,600	...	...	61	74	...
	11	Rampur ditto	2	1,320	124	2	1,300	2	1,320	...	...	102	126	...
	12	Nagpur Sub-Distributary	2	4,840	28	2	4,800	2	4,800	...	...	58	118	...
	13	Boipa ditto	2	1,320	45	2	1,320	2	1,320	...	...	50	112	...
	14	Hakimpur Distributary	3	2,000	47	...	2,000	3	2,000	...	...	...	23	...
	15	Karehi ditto	3	2,000	26	3	2,000	3	2,000	24	90
			146	1,623								Total Chowwa Branch Canal		
												Mean duty, Chowwa Branch Canal		

and Branches for the year 1898-99.

DIVISION.

TOTAL AREA IRRIGATED.			WORKING DUTY, IN ACRES, PER CUBIC FOOT OF DISCHARGE.			WORKING DUTY, IN ACRES, PER CUBIC FOOT OF DISCHARGE FOR PREVIOUS THREE YEARS.									Serial number of dis-tributory.	REMARKS.
						1896-96.			1896-97.			1897-98.				
Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.		
11	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SUBDIVISION.																
700	508	...	64	84	...	78	9	...	90	28	...	68	66	...	1	
3,719	1,065	520	103	116	48	95	139	...	85	141	...	104	172	...	2	
1,007	408	109	73	39	36	101	53	48	86	76	42	87	99	47	3	
2,135	2,577	629	240	239	101	265	203	46	260	269	87	259	329	77	4	
...	...	...	80	76	50	89	63	46	90	90	43	86	110	68	5	
SUBDIVISION.																
320	390	28	166	190	38	74	107	...	144	107	...	170	173	27	6	
1,763	591	167	149	101	56	64	140	36	85	119	54	104	132	57	7	
2,115	864	196	315	291	84	134	256	36	239	226	54	278	303	84	8	
...	...	...	167	145	42	69	128	36	114	113	54	139	132	42	9	
SUBDIVISION.																
172	164	...	172	164	...	...	...	...	80	181	...	111	...	...	6	
66	1,136	52	195	193	...	...	...	...	70	164	30	191	203	41	7	
1,940	1,086	...	132	165	...	...	...	...	81	135	45	117	113	...	8	
23	10	...	29	8	...	...	...	...	68	380	...	...	...	...	9	
2,761	2,416	52	523	515	...	...	...	...	299	300	84	419	315	61	10	
...	...	...	180	129	...	...	...	...	75	290	42	140	157	61	11	
10,401	6,117	876	1,077	1,033	185	406	459	84	797	1,293	225	956	949	222	12	
...	...	...	122	117	41	81	92	42	89	144	45	139	136	44	13	
SUBDIVISION.																
6734	2,082	591	71	20	10	81	15	23	42	54	239	36	31	21	1	
701	361	20	100	120	7	66	24	...	52	45	24	15	43	7	2	
673	700	86	64	25	29	67	25	9	54	52	31	82	80	34	3	
1,115	352	85	159	176	...	225	56	7	1,464	164	...	249	...	...	4	
80	14	46	22	7	23	21	7	...	10	3	28	14	7	47	5	
408	147	...	26	73	...	30	30	...	26	61	...	44	14	...	6	
12,551	7,089	1,811	102	81	33	66	89	22	72	97	60	90	81	48	7	
94	774	182	16	45	...	10	64	...	12	66	19	13	43	16	8	
1,510	634	...	88	71	...	177	82	4	66	112	...	103	83	...	9	
81	196	44	...	...	...	...	...	...	...	...	...	...	...	...	10	
206	74	...	32	24	...	2	...	...	47	47	...	43	18	...	11	
295	163	...	...	54	...	...	132	...	...	244	...	...	13	...	12	
2,106	591	63	59	82	26	365	69	13	53	109	34	140	63	24	13	
240	225	40	14	32	5	54	15	...	22	34	...	38	47	31	14	
398	74	34	37	15	12	60	16	9	34	27	...	40	18	8	15	
3,152	2,217	253	85	111	25	42	64	1	47	74	...	53	30	2	16	
1,467	1,096	62	100	78	...	7	68	...	65	90	9	71	46	28	17	
497	612	...	40	87	...	...	114	...	69	142	71	187	135	65	18	
2,229	746	52	64	93	...	53	79	...	63	126	...	96	62	23	19	
627	510	69	78	127	12	63	43	...	70	96	4	64	77	34	20	
447	263	46	32	67	8	53	23	14	50	58	11	66	69	12	21	
1,496	439	45	91	146	16	30	31	...	48	67	2	175	58	27	22	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	
1,696	828	63	100	48	31	...	...	...	56	140	4	95	90	25	24	
2,302	955	283	116	159	33	78	72	18	86	146	23	100	94	34	25	
123	189	48	77	14	...	...	...	...	...	...	...	...	...	...	26	
625	234	24	67	58	...	...	...	...	...	...	...	...	...	...	27	
811	234	77	85	112	26	32	30	...	58	23	7	63	23	40	28	
303	66	...	70	31	...	29	1	...	14	57	...	65	19	12	29	
344	355	...	55	118	9	18	32	...	54	73	5	31	80	5	30	
933	591	69	58	118	23	...	166	...	45	79	13	107	166	17	31	
405	353	...	72	39	...	16	...	...	121	...	...	379	75	...	32	
1,536	421	...	74	84	6	24	...	...	63	...	...	88	69	50	33	
...	136	52	...	136	11	...	9	2	90	...	5	...	30	21	34	
84	11	10	...	...	...	...	...	...	...	...	...	...	...	...	35	
41,905	23,634	4,180	2,091	2,574	343	1,651	1,448	129	2,897	2,708	626	2,744	1,632	645	36	
SUBDIVISION.																
12,993	4,321	805	300	141	100	123	136	67	48	136	44	244	46	80	1	
221	80	19	115	20	19	...	...	...	65	29	...	77	21	18	2	
136	801	...	195	115	...	65	140	...	80	151	...	68	162	...	3	
398	295	...	...	147	...	...	104	...	...	180	...	...	80	...	4	
1,819	1,393	30	193	174	30	54	141	...	113	137	...	180	65	...	5	
1,614	1,030	...	164	145	...	87	83	...	129	143	...	239	126	...	6	
2,402	907	...	189	96	...	81	191	...	137	110	...	156	80	...	7	
621	136	...	165	133	...	80	77	...	110	181	...	123	52	...	8	
6,246	388	...	81	97	...	106	149	...	92	148	...	137	...	...	9	
2,000	...	126	90	104	35	114	41	...	136	191	...	81	17	...	10	
690	...	...	173	216	...	61	114	...	61	70	45	124	68	...	11	
972	...	...	164	97	...	67	112	...	70	744	...	143	180	...	12	
139	...	...	181	...	...	101	...	...	137	108	56	163	77	...	13	
131	...	...	70	60	...	81	51	...	21	75	...	...	...	...	14	
13,220	...	992	1,942	1,776	174	798	1,368	67	1,325	1,873	145	1,771	977	116	15	
...	...	...	149	118	43	78	105	47	86	125	48	136	75	89	...	

Working Statistics of Distributaries by Canals

CANAL OR BRANCH.	Serial number of distributary.	NAME OF DISTRIBUTARY.	Length of distributary constructed in miles.	Estimated full capacity as designed.	LENGTH OF DISTRIBUTARIES OPEN, IN MILES, DURING SEASON.			NUMBER OF DAYS DISTRIBUTARY WAS IN FLOW DURING SEASON.			AVERAGE DISCHARGE UTILISED.		
					Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Garra Chaube Branch Canal.	1	Garra Chaube Branch Canal	M. 36 Ft. ...	644	M. 23 Ft. 2,400	M. 23 Ft. 2,400	M. 23 Ft. 2,400	122	156	...	47	16	...
	2	Khurghur Distributary	M. 19 Ft. 800	197	M. 12 Ft. 800	M. 12 Ft. 800	M. 122 Ft. 156	24	67	...	16	...	...
	3	Salthua Sub-distributary	M. 4 Ft. 4,000	97	M. 4 Ft. 4,000	M. 4 Ft. 4,000	M. 86 Ft. 156	13	5	...	15	...	...
	4	Dumduma ditto	M. 6 Ft. ...	56	M. 6 Ft. ...	M. 6 Ft. ...	M. 122 Ft. 156	24	67	...	16	...	...
	5	Loknathpur Distributary	M. 6 Ft. ...	71	M. 5 Ft. ...	M. 5 Ft. ...	M. 86 Ft. 156	13	5	...	15	...	...
	6	Kuthraia ditto	M. 4 Ft. 600	81	M. 4 Ft. 600	M. 4 Ft. 600	M. 117 Ft. 156	24	67	...	16	...	...
	7	Panraon ditto	M. 36 Ft. 2,520										
Total Garra Chaube Branch Canal													
Mean duty, Garra Chaube Branch Canal													

and Branches for the year 1898-99.

TOTAL AREA IRRIGATED.			WORKING DUTY, IN ACRES, PER CUBIC FOOT OF DISCHARGE.			WORKING DUTY, IN ACRES, PER CUBIC FOOT OF DISCHARGE FOR PREVIOUS THREE YEARS.									Serial number of dis-tributory.	REMARKS.
						1895-96.			1896-97.			1897-98.				
Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.	Kharif.	Rabi.	Hot weather.		
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DIVISION.																
2,411	2,708	...	60	100	...	} No records.				81	103	53	76	...	1 2 3 4 5 6 7	
4,109	1,644	...	174	63	...					160	273	125	64	...		
281	1,174	...	51	75	...					80	280	130	102	...		
224	137	...	45	82	...					57	140	90	51	...		
424	387	...	85	77	...					74	180	153	93	...		
121	479	...	121	239	...					26	171	25	55	...		
531	413	...	139	137	...					73	76	139	58	...		
8,249	5,975	...	670	792	...	...	...	...	...	490	1,211	683	220	...		
...	...	...	90	112	...	...	...	...	...	70	178	96	74	...		

APPENDIX III.

Statement showing the Number of Days spent on Duty and on Tour by Superintending, Executive and Assistant Engineers and Upper Subordinates of the Irrigation Branch, during the year 1898-99.

NAME.	Circle or Division.	NUMBER OF DAYS—		REMARKS.
		On duty.	On tour.	
1	2	3	4	5
Superintending Engineers.				
Mr. J. H. Toogood	Sone Circle	365	183	Was on furlough till 4th December 1898 and took over charge on the 5th. Was appointed Officiating Chief Engineer from 9th March 1899.
" D. B. Horn	South-Western Circle	94	42	
" K. H. Stephen	Ditto	271	97	Officiated as Superintending Engineer (1) during the absence on furlough of Mr. Horn from 1st April to 4th December 1898, and (2) during the period Mr. Horn officiated as Chief Engineer from 9th March 1899.
" W. A. Inglis	Orissa Circle	274	127	On privilege leave for three months, from 17th May to 15th August 1898.
" A. S. Thomson	Ditto	91	25	Officiated during the absence on privilege leave of the permanent incumbent. For the rest of the year in the Roads and Buildings Branch.
Executive Engineers.				
Mr. C. H. DeMello	Arrah	274	103	On three months' privilege leave, from 26th April to 25th July 1898.
" J. Zorab	Do.	106	28	Officiated as Executive Engineer during the absence of Mr. DeMello. Fifteen days spent in acquiring knowledge of divisional duties. For details, see under "Assistant Engineers."
Rai Annoda Prosad Sircar Sahib	Do.	13	...	Transferred to the 2nd Calcutta Division which he joined on 19th April 1898.
Mr. G. C. Maconochy	Buxar	315	122	On leave for 28 days. Transferred to the Balasore Division. For remarks, see under "Assistant Engineers."
" C. W. Sibbold	Do.	50	...	On privilege leave for 88 days, from 7th April 1898.
" G. L. Searight	Eastern Sone	277	139	Held charge of the Division in addition to his duties as Inspector of Works, Bihar Division.
" T. Butler	Ditto	88	16	
" H. H. Green	Gandak	365	135	On leave for six days, from 12th April 1898, preparatory to his proceeding on furlough for 8 months and 15 days, commencing from 18th idem, and on 11 days' subsidiary leave. Joined Brahmini-Byturni Division on 12th January 1899.
" B. Barlow	Cossye	11	3	Was in charge of the Division for 354 days only.
" J. S. L. Long	Do.	365	232	
" C. A. White	Balasore	365	152	On transfer to take charge of the Division.
" G. C. Maconochy	Do.	24	5	On privilege leave for 51 days, from 3rd May to 22nd June 1898.
" O. S. Smith	Nadia Rivers	314	147	For remarks, see under "Superintending Engineers." For two days held charge of the Division in addition to South-Western Circle.
" K. H. Stephen	Northern Drainage and Embankment.	95	35	Officiated during the deputation of Mr. Stephen as Superintending Engineer, South-Western Circle.
Rai Gopal Ch. Daw Sahib	Ditto	269	133	On privilege leave for three months, from 27th July 1898.
Mr. P. G. Jacobs	Circular and Eastern Canals.	268	71	On preparatory and subsidiary leave for five days.
" J. Zorab	Ditto	95	30	Officiating. For remarks, see under "Assistant Engineers."
" J. W. Fox	Ditto	2	...	
" M. H. Arnott	Mahanadi	365	158	Transferred to the Northern Circle which he joined on 28th January 1899.
" R. E. Carter	Brahmini-Byturni	287	135	Joined the Division on the afternoon of 12th January 1899.
" H. Barlow	Ditto	78	21	For details, see remarks against Cossye Division.
" J. C. Hewitt	Aquapada-Jajpur	365	189	
Assistant Engineers.				
Mr. E. Arundel Smith	Arrah	365	280	
Babu Saroda Sundar Pal	Do.	289	184	On privilege leave for 2 months and 15 days, from 1st April to 2nd July 1898.
" Triloke Nath	Do.	14	4	On special duty.
Mr. C. W. Sibbold	Buxar	315	194	Officiated as Executive Engineer for 50 days during absence of Mr. G. C. Maconochy.
" J. Zorab	Do.	9	7	
Babu Triloke Nath	Do.	38	18	
Rai Beni Madhab Mitter Sahib	Eastern Sone	316	241	On privilege leave for three months, from 16th November 1898 to 15th February 1899. On joining leave for 2 days.
Mr. E. Blaber	Ditto	271	226	Officiated as Executive Engineer (1) of the Arrah Division (106 days), and (2) of the Circular and Eastern Division (95 days). Was in the Buxar Division for 9 days.
" J. Zorab	Ditto	110	55	On privilege leave for 1 month and 14 days, from 1st February 1899; and on joining leave for 4 days.
Babu Triloke Nath	Ditto	185	33	
" Amar Nath Das	Ditto	365	182	
Mr. G. T. Huntingford	Ditto	66	33	For remarks, please see below.
" C. Addams-Williams	Ditto	6	...	Appointed from 20th March 1899 and held charge of (Daudnagar) subdivision.
" A. A. F. Cowley	Cossye	30	25	Held charge of No. 4 subdivision for 335 days only.
" R. C. Edge	Do.	365	175	Was attached to the Cossye Division.
" A. A. F. Davis	Do.	34	11	In charge of No. 4 (Contal) subdivision. On language leave for three months, from 6th October 1898 to 5th January 1899, both days inclusive. Transferred to the Sone Division with effect from 23rd January 1899.
" G. T. Huntingford	Balasore	205	113	Transferred from Central Province. Was attached to Division for 20 days and in charge of Pipri subdivision for 4 days; also vide remarks against Brahmini-Byturni Division.
" Bisban Swarup	Mahanadi	24	9	

NAME.	Circle of Division.	NUMBER OF DAYS—		REMARKS.
		On duty.	On tour.	
1	2	3	4	5
Assistant Engineers—consolid.				
Mr. W. S. Bremner	Brahmini-Byturni ...	365	283	In charge of Kendrapada subdivision.
Babu Madhu Sudan Sen Gupta ...	Ditto ...	219	104	In charge of Kendrapada subdivision.
Mr. Bishan Swarup	Ditto ...	65	1	Employed in counting the stock of the Johra Workshop, from 30th November 1898 to 2nd February 1899. On privilege leave for three months, from 3rd February 1899.
Babu Madhu Sudan Sen Gupta ...	Aoquapada-Jajpur ...	89	...	On special duty in connection with the survey of the Dudhai Channel, from 10th August to 6th November 1898. On privilege leave for 1 month and 27 days, from 7th November 1898.
Sub-Engineers.				
Rai Satowri Chatterjee Sahib ...	Eastern Bone ...	365	57	Honorary Assistant Engineer. Principal works lie at head-quarters.
Mr. I. J. Atkinson	Gandak ...	365	74	Principal works lie at head-quarters.
" C. M. S. Rooke	Do. ...	328	12	Ditto ditto ditto. On leave for 42 days.
Babu Tarini Charan Sarcar ...	Arrah ...	365	237	
" Jadu Nath Bose	Do. ...	107	62	
M. G. Caw	Do. ...	365	68	
Babu Kanti Chunder Banerjee ...	Buxar ...	359	248	Temporary Sub-Engineer. Joined 7th April 1898 and held charge of No. 4 (Monoharpur) subdivision.
" Gopal Chunder Ghose	Cossye ...	365	149	In charge of No. 5 (Panskurah) subdivision.
Rai Rakhal Das Chatterjee Sahib ...	Nadia Rivers ...	365	110	Held charge of No. 2 subdivision.
Babu Rakhal Das Roy	Ditto ...	277	190	Honorary Assistant Engineer. In charge of No. 5 subdivision. Was on privilege leave from 18th July to 13th October 1898.
Mr. J. C. Cox	Ditto ...	37	18	
Rai Bama Charan Pramanic Bahadur ...	Ditto ...	216	...	Honorary Assistant Engineer. In charge of toll-office at Jangipur. Retired on 3rd November 1898.
" Durga Charan Chuckerbutty Sahib ...	Northern Drainage and Embankment ...	365	299	In charge of the Edilpore subdivision.
" Gopal Ch. Daw Sahib	Ditto ...	95	58	Honorary Assistant Engineer. Held charge of the Seijberiah subdivision for 91 days.
Mr. J. W. Fox	Circular and Eastern Canals ...	365	180	Honorary Assistant Engineer. In charge of No. 2 subdivision.
Babu Dakshina Ranjan Mukerjee ...	Ditto ...	298	195	In charge of No. 3 (Bhangore) subdivision.
Mr. C. Hynes	Ditto ...	365	156	Supervisor of dredging plants, &c.
Rai Prasanna Coomar Pal Sahib ...	Aoquapada-Jajpur ...	365	210	In charge of the Janapur subdivision.
Supervisors.				
Mr. A. E. James	Gandak ...	365	82	
Babu Rajendra Lal Sircar	Ditto ...	365	320	On furlough for 1 year, from 10th April 1898.
" Mahendra Nath Sircar	Buxar ...	9	...	In charge of No. 6 Gadghat subdivision.
" Roma Nath Sircar	Cossye ...	365	118	Held charge of No. 4 (Contai) subdivision for 160 days only.
Mr. A. E. Hoffmann	Balasore ...	339	234	In charge of No. 2 subdivision and workshop station building.
Babu Suresh Chunder Ganguli ...	Ditto ...	365	145	Held charge of No. 3 subdivision for 122 days and Chandipore subdivision for 213 days.
" Mohini Mohan Lahiri	Ditto ...	365	123	On three months' privilege leave, from 18th June to 17th September 1898; and on joining and subsidiary leave for 2 weeks. Was in the Circular and Eastern Canals Division as Overseer, 1st grade, for 34 days, and transferred to the Nadia Rivers Division, from 3rd November 1898.
" Rajendra Nath Mukerjee	Ditto ...	77	56	In charge of No. 3 subdivision.
" Akshaya Krishna Bose	Nadia Rivers ...	365	126	In charge of the Jangipur toll-office, from 3rd November 1898.
" Rajendra Nath Mukerjee	Ditto ...	149	...	Was in the Balasore Division for 339 days; and on joining, leave for 1 day.
Mr. A. E. Hoffmann	Circular and Eastern Canals ...	25	5	
" W. R. Cooksey	Ditto ...	365	365	In charge of the Cuttack subdivision.
Babu Bankim Krishna Ghose ...	Mahanadi ...	365	107	In charge of the Jagatsinghpore subdivision.
" Sashi Bhushan Mazumdar ...	Ditto ...	365	287	In charge of the Munijunga subdivision.
" Upendra Nath Mukerjee	Ditto ...	365	302	Held charge of the Pipili subdivision for 361 days.
" Surendra Nath Barak	Ditto ...	365	326	On furlough for one year, from 16th December 1897 to 15th December 1898. On subsidiary leave for one day. Held charge of the Kendrapada subdivision for 99 days.
" Hari Charan Mukherjee	Brahmini-Byturni ...	108	67	In charge of the Johra Workshops subdivision. On leave for 11 days.
Mr. C. A. Marchant	Ditto ...	354	56	In charge of the Akhoyapada subdivision.
Babu Pran Krishna Sen	Aoquapada-Jajpur ...	295	182	In charge of the Jajpur subdivision.
" Krishnachand Banerjee	Ditto ...	365	256	
Overseers.				
Babu Jagat Narain	Gandak ...	365	220	In charge of No. 4 (Basantpur) subdivision.
" Phani Lal Mullick	Do. ...	365	63	In charge of No. 2 (Mozaffarpur) subdivision.
" Satya Ranjan Khastgir	Buxar ...	356	268	In charge of No. 5 (Bamawan) subdivision. On leave for 9 days.
" Jadu Nath Das	Cossye ...	365	112	Sectional Officer.
" Surendra Nath Bhattacharya ...	Do. ...	365	157	Ditto.
" Mahit Kumar Chatterjee	Do. ...	365	94	Ditto.
" Kedar Nath Mazumdar	Balasore ...	365	207	Held charge of No. 3 subdivision for 243 days.
" Mahendra Chandra Banerjee ...	Ditto ...	365	275	In charge of No. 5 (Etamagra) subdivision.
" Sarat Chandra Sur	Nadia Rivers ...	365	118	In charge of No. 6 (Katwa) subdivision.
" Hari Mohan Bhaduri	Ditto ...	365	71	Not in charge of any subdivision.
" Upendra Nath Dutt	Ditto ...	365	65	
" Hari Das Bhaduri	Northern Drainage and Embankment ...	365	269	In charge of No. 2 (Surjipore) subdivision.
" Aghore Chandra Chatterjee	Ditto ...	337	126	Not in charge of any subdivision.
" Rajendra Nath Mukerjee	Circular and Eastern Canals ...	1	...	In charge of No. 4 (Amaasuni) subdivision.
" Jogendra Nath Sen	Ditto ...	339	115	Ditto ditto ditto. Took charge on the afternoon of 26th April 1898.
" Khetra Nath Palit	Ditto ...	365	120	In charge of No. 3 (Firojpur) subdivision.
" Rajendra Nath Mukerjee	Ditto ...	83	19	Not in charge of any subdivision.
" Aghore Chandra Chatterjee ...	Ditto ...	...	...
" Hira Lal Sen	Mahanadi ...	304	279	Ditto ditto.
" Kalidhan Bhattacharya	Brahmini-Byturni ...	274	144	Held charge of No. 3 (Kendrapada) subdivision for 47 days. Was on leave.
" Bijoy Krishna Dey	Ditto ...	274	86	Not in charge of any subdivision.

APPENDIX IV.

Statement showing Inspections of Offices by Superintending and Executive Engineers during the year 1898-99.

NAME OF OFFICER.	DIVISIONAL OFFICES.		SUBDIVISIONAL OFFICES.		REMARKS.
	Number in circle.	Number inspected during the year.	Number in circle.	Number inspected during the year.	
1	2	3	4	5	6
<i>Superintending Engineers.</i>					
Mr. J. H. Toogood, Sone Circle	5*	3†	23	3	* Inclusive of Revenue Division.
„ D. B. Horn, } South-Western Circle	6*	3†	26	...	† The officers of the Arrah and Sone Canals Revenue Division and those of the Orissa and Balasore Divisions were not inspected by the Superintending Engineers during the year.
„ K. H. Stephen, }					
„ W. A. Inglis, } Orissa Circle	4*	4	13	5	Besides these the Superintending Engineer inspected the offices of the 2 District Engineers, Angul and Puri, 6 talukdars, and 4 silladars.
„ A. S. Thomson, }					
<i>Executive Engineers.</i>					
Mr. C. H. DeMello, } Arrah Division ... ..	...	...	7	5	Besides these the Executive Engineers inspected 3 toll offices.
„ J. Zorab, }					
„ G. C. Macconchy, } Buxar Division ... ..	...	...	5	3	Ditto 2 toll offices.
„ C. W. Sibold, }					
„ G. L. Searight, } Eastern Sone Division	...	...	6	3	Ditto 4 toll offices.
„ T. Butler, }					
„ H. H. Green, Gandak Division ... ..	...	...	5	...	
„ H. Barlow, } Coosye Division ... ..	...	...	6	4	Ditto 8 toll offices.
„ J. Lane Long }					
„ C. A. White, Balasore Division ... ..	...	...	5	5	Ditto 9 toll offices.
„ O. S. Smith, Nadia Rivers Division ...	...	...	6	6	Ditto 3 toll offices.
„ K. H. Stephen, } Northern Drainage and Embankment Division.	...	...	4	4	NIL.
„ Rai Sahib Gopal Chandra Daw. }					
Mr. P. G. Jacobs, } Circular and Eastern Canals Division.	...	...	5	4	Besides these the Executive Engineer inspected 2 toll offices at Dhappa and Chitpur.
„ J. W. Fox, }					
„ J. Zorab, }					
„ M. H. Arnott, Mahanadi Division ...	...	...	5	4	Ditto 3 toll offices.
„ R. E. Carter, } Brahmini-Bytarni Division	...	...	4	2	Ditto 7 toll offices.
„ H. Barlow, }					
„ J. C. Hewitt, Acquapada-Jajpur Division	...	...	4	3	Ditto 3 toll offices.

APPENDIX V.

List of Officers in charge of Irrigation Circles and Divisions during the year 1898-99.

Circle or Division.	Name of Officer.	Period of charge.
1	2	3

SECRETARIAT.

Secretary, Irrigation Department.	Col. A. D. McArthur, R.E. ...	From 1st April 1898 to 8th March 1899. (On privilege leave from 9th March to 1st April 1899.)
Under-Secretary, Irrigation Department.	Mr. D. B. Horn ...	Offg. from 9th March to 31st March 1899.
Ditto ditto	" T. H. Clowes*	From 1st April to 20th October 1898.
	" A. H. C. MacCarthy ...	" afternoon of 20th October 1898 to 31st March 1899.

* Placed in charge of the current duties of Chief Engineer and Secretary during the absence on privilege leave of Col. A. D. McArthur, R.E., from 1st to 8th April 1899.

SUPERINTENDING ENGINEERS IN CHARGE OF CIRCLES.

South-Western Circle	...	Mr. K. H. Stephen	...	From 1st April 1898 to 4th December 1898, and from 9th March to 31st March 1899.
Ditto	...	" D. B. Horn	...	" 5th December 1898 to 8th March 1899.
Sone Circle	...	" J. H. Toogood	...	" 1st April 1898 to 31st March 1899.
Orissa Circle	...	" W. A. Inglis	...	" 1st April to 16th May 1898 and 16th August 1898 to 31st March 1899.
Ditto	...	" A. S. Thomson	...	" 17th May to 16th August 1898.

EXECUTIVE ENGINEERS IN CHARGE OF DIVISIONS.

SOUTH-WESTERN CIRCLE.

Nadia Rivers Division	...	Mr. O. S. Smith	...	From 1st April 1898 to 2nd May 5th 1898, and 22nd June 1898 to 31st March 1899.
Ditto	...	Babu Rakhal Das Roy	...	" 3rd May 1898 to 31st June 1898.
Northern Drainage and Embankment Division.	...	Rai Sahib Gopal Ch. Daw	...	" 1st April 1898 to 4th December 1898, and from 11th March to 31st March 1899.
Ditto	...	Mr. K. H. Stephen	...	" 5th December 1898 to 10th March 1899.
Circular and Eastern Canals Division.	...	" P. G. Jacobs	...	" 1st April 1898 to 26th July 1898, and 1st November 1898 to 31st March 1899.
Ditto	...	" J. W. Fox	...	" 27th and 28th July 1898.
Ditto	...	" J. Zorab	...	" 29th July 1898 to 31st October 1898.
Coosye Division	...	" J. S. Lane Long	...	" 12th April 1898 to 31st March 1899.
Ditto	...	" H. Barlow	...	" 1st to 11th April 1898.
Balasore Division	...	" C. A. White	...	" 1st April 1898 to 31st March 1899.

ORISSA CIRCLE.

Mahanadi Division	...	Mr. M. H. Arnott	...	From 1st April 1898 to 31st March 1899.
Acquapada-Jajpur Division	...	" J. C. Hewitt	...	" 1st April 1898 to 31st March 1899.
Brahmani-Baitarni Division	...	" R. E. Carter	...	" 1st April 1898 to 12th January 1899.
Ditto ditto	...	" H. Barlow	...	" 18th January 1899 to 31st March 1899.

List of Officers in charge of Irrigation Circles and Divisions during the year 1898-99—concl'd.

Sone Circle.

Circle or Division.	Name of Officer.	Period of charge.
1	2	3
Arrah Division ...	Mr. C. H. DeMello ...	From 1st April 1898 to 25th April 1898, and from 26th July 1898 to 31st March 1899.
Ditto ...	" J. Zorab ...	" 26th April 1898 to 25th July 1898.
Buxar Division ...	" G. O. Macconchy ...	" 1st April 1898 to 25th November 1898, and 22nd December 1898 to 7th March 1899.
Ditto ...	" C. W. Sibold ...	" 26th November 1898 to 21st December 1898, and 8th to 31st March 1899.
Eastern Sone Division ...	" G. L. Searight ...	" 1st April 1898 to 6th April 1898, and from 4th July 1898 to 31st March 1899.
Ditto ...	" T. Butler ...	" 7th April 1898 to 3rd July 1898.
Gandak Division ...	" H. H. Green ...	" 1st April 1898 to 31st March 1899.

CANAL REVENUE OFFICERS.

Deputy Collector, Revenue Division, Orissa Canals.	Babu Madhab Lal ...	From 1st April 1898 to 8th October 1898, and 21st November 1898 to 31st March 1899.
Ditto ditto ...	" Roy Debi Lal ...	" 9th October 1898 to 20th November 1898.
Deputy Collector, Revenue Division, Midnapore Canals.	" Ram Sadan Bhatta-charji.	" 1st April 1898 to 31st March 1899.
Deputy Collector, Revenue Division, Sone Canals.	Maulvi S. M. Nasiruddin ...	" 1st April 1898 to 31st March 1899.
Supervisor, Calcutta Canals ...	Mr. W. R. Cooksey ...	" 1st April 1898 to 31st March 1899.

RESOLUTION ON THE ANNUAL GENERAL ADMINISTRATION REPORT
OF THE PRESIDENCY DIVISION FOR THE YEAR 1898-99.

GENERAL DEPARTMENT—(MISCELLANEOUS).

Darjeeling, the 14th November 1899.

RESOLUTION—No. 666T.—G.

READ—

The Annual General Administration Report of the Presidency Division for the year 1898-99.

Mr. C. E. Buckland, C.I.E., was in charge of the Presidency Division throughout the year.

2. *Tours and inspections.*—The Commissioner was on tour for 103 days mostly in the rains, and inspected almost every office and institution of importance in his Division. The Collectors spent an adequate number of days on tour, and none of the Subdivisional Officers devoted less than 90 days to that work. The Collectorate and subdivisional head-quarter offices are reported to have been thoroughly inspected in all cases, except in the 24-Parganas and Murshidabad, in which districts it does not appear that the Subdivisional Officers made formal inspections.

3. *Weather and crops: Material condition of the people: Prices and wages: Public health.*—The rainfall was full and well distributed. Consequently the crops were better than in the previous year. From Khulna a bumper crop of *aman* was reported, a normal one in the 24-Parganas and Jessore, and a fair one in the other two districts; and the divisional average of the other crops was better than those of the two preceding years. Consequently the prices of rice and other grains decreased; and as wages remained unaltered, the classes paid by wages were better off than before. The respectable middle classes, or *bhadra lok*, are reported to have shared but slightly in the general prosperity, as they spend more on living and are more extravagant on marriage ceremonies. The information is hardly consistent with other allegations that have been made as to the deterioration in the fortunes of this branch of the community. The Lieutenant-Governor cannot question the correctness of the Commissioner's observations, and so far as the Presidency Division is concerned, he does not doubt that people so enlightened will, if and when necessary, combine to retrieve their affairs by greater economy in their marriages. But, as he has before remarked, the real cure for the stagnation into which the class is falling, elsewhere at least, lies in the pursuit of other than clerical occupations. The agricultural class generally has fared well, and the *utbandi asamis* of Nadia are reported to have attained to as much prosperity as is possible for them. The large number of coolies employed in the various mills of the Division readily found employment; and as their numbers were to some extent kept down by the plague scare of the year, they were in a position to select their employers with a degree of freedom which was more suited to promote their personal convenience than to enhance the discipline of the mills.

The year was notable for the almost complete absence of epidemic disease; and though the registration of vital statistics is with reason believed to be incomplete, yet the view of the Commissioner appears to be correct that the lower registered death-rate represents a real decrease in the mortality in comparison with previous years.

4. *Manufactures: Trade and Commerce.*—The jute industry appears to have been fairly profitable in the last year; but the cotton mills endured a period of stagnation which has not yet expired. The two paper mills of Titaghar and Kankinara still further increased their product. The value of the silk produce decreased from 31½ lakhs to 28 lakhs; but there is good ground for hoping that the measures now being taken to improve the rearing of silk-worms will check this decline. The report on the produce of sugar shows how seriously the increasing import of refined sugar had affected the factories of Jessore. Indigo will soon cease to be one of the important products of the Division.

The total number of factories is reported to have been 63; while the employes were 80,879 as compared with 80,983. Thus the absolute decrease was small; but the requirements of the year were greater; hence there was a real deficiency of labour due to a dread of plague.

The Lieutenant-Governor observes with regret that the manager of the sugar mill at Cossipore refused to furnish to the Commissioner the usual information about his factory. Several instances of this attitude on the part of manufacturers have recently been brought to the notice of the Lieutenant-Governor, who cannot but think that they must be due to some misunderstanding readily capable of removal if only set forth. These statistics are of the utmost importance to the community generally, forming the basis of the commercial legislation of the Imperial Government, and the Lieutenant-Governor considers that, in the absence of very powerful special reasons to the contrary, which could be communicated confidentially to the local authority, the information might always be given.

5. *Civil Justice.*—The number of civil suits instituted rose from 113,685 to 116,171, of which 53,071 and 55,773 respectively were rent suits. The increase was therefore almost entirely confined to that class of cases; and the Commissioner's explanation that it was due to the recovery of the loans advanced in the scarcity appears to be scarcely correct.

The number of cases disposed of rose from 116,256 to 119,987. The proportion of contested cases fell slightly to 17·3 per cent.

6. *Crime: Criminal Justice: Police.*—The number of cognizable cases fell from 22,734 to 20,833; but, as the Commissioner points out, the figures are still greatly in excess of those for 1895 and 1896, and the explanations of the District Magistrates should have been directed to the persistence of the increase over those years rather than the partial decrease. Of these 665 were declared to be false; prosecutions were instituted in 78 cases, and conviction followed in 31. These results may on the whole be considered fairly good, looking to the well-known difficulty of bringing home a charge under section 211, Indian Penal Code. Compensation was awarded under section 250, Criminal Procedure Code, in 144 cases as compared with 142 in the previous year. The proportion of cases in which inquiry into a complaint was refused by the police again fell considerably.

The number of persons sent up for trial was 15,250, of whom 10,363 were convicted. There were 43 murders, in 13 of which convictions were obtained; and the number of dacoities similarly fell from 49 to 36, out of which 22 were in the 24-Parganas. In 14 cases convictions were obtained, 10 being in the 24-Parganas. The cases of rioting decreased from 542 to 502, in 17 of which there was loss of life. The number of bad livelihood cases increased from 548 to 662, but it does not appear how many of these were tried locally. This should be stated in future reports.

The number of non-cognizable offences rose from 18,596 to 19,978, an increase due partly, so it is said, to the increased prosperity of the people, and partly to the fact that in the district of Khulna a large number of persons were prosecuted for disobeying summonse. As it appears that of 25,910 persons summoned only 16,809 appeared before the Magistrate, it would seem that much remains to be done to impress on people the necessity of complying with such calls.

There were 203 cases tried by the Courts of Sessions, in 64 per cent. of which convictions resulted. There were 60 stipendiary and 42 honorary subordinate courts. The Honorary Magistrates empowered to sit alone are reported to have attended regularly; but such unfortunately cannot be said with regard to the others. The Lieutenant-Governor is glad to observe from the detailed statement appended that the Commissioner has already given much attention to this matter. The Honorary Magistrates decided 8,503 cases and the Stipendiary Magistrates 22,515. The detention of witnesses more than two days increased, and is reported to be a serious evil in the Courts of the Honorary Magistrates. Fines as punishments appear to have been imposed with due reference to the means of the convicts.

In the police the process of replacing Head-Constables by Sub-Inspectors was continued. No very decided opinions are offered by the District

Magistrates on their conduct, but it is noted that the number of those dismissed appreciably increased, while the number of those punished departmentally rose from 246 to 669. Judicial punishments fell from 50 to 45. Resignations, it is observed, rose from 86 to 115. Less than 20 per cent. of the nominal stolen property was recovered by the police.

In chaukidari matters progress was made in substituting paid men for those remunerated by service tenures, in the organisation of the *daffaduri* system, and in the introduction of higher castes. It is observed that the amount of rewards paid to chaukidars was double that of previous years. It is stated that in the 24-Parganas an attempt is now being made to secure regular attendance at parades by rewarding punctual men rather than by constantly fining the unpunctual. This is a plan which will require to be worked very carefully if it is to succeed. There is a certain minimum of duties which a chaukidar must do, and in that minimum the first duty is the weekly attendance at the parade. His merits should be weighed in a liberal scale, but the distinction between merit and duty should be retained.

7. *Land Revenue and Cesses.*—The total demand of land revenue was Rs. 53,41,233 and the total collections Rs. 51,93,060, or 97·2 per cent. The collections were slightly better than last year, and the outstanding balance at the end of the year was less. The collections of the various districts, exhibited in percentages, are as follow :—

	PERMANENTLY-SETTLED ESTATES.		TEMPORARILY-SETTLED ESTATES.		DIRECTLY MANAGED ESTATES.	
	Current.	Arrear.	Current.	Arrear.	Current.	Arrear.
1	2	3	4	5	6	7
Standard percentage	99	100	95	.....	90	.....
24-Parganas ..	98·9	93·9	94	80·2	85·2	66·7
Nadia ...	99·5	99·99	97·9	99·8	95	87·5
Murshidabad ...	99·8	95	97·6	72·1	70·9	81·1
Jessore ...	97·7	100	88	84·1	94·4	78
Khulna ...	99·5	98·5	84·2	98·7	94·6	99·2
Calcutta ...	.....	.....	.....	.....	99·9	71·4
Division ...	99·1	97·7	90·7	94·6	86	74

The divisional percentage of collections of the current demand was above the standard, and the only districts in which it was short were Jessore and the 24-Parganas, in the latter of which however it only just failed to reach the standard. In the first district, however, the arrear collections were complete. It would appear that a large proportion of the arrears in Jessore are due from the deeply embarrassed Sridharpur estate, under the Court of Wards. The collections in temporarily-settled estates were poor, as regards current demands in Khulna, and as regards arrears in Jessore, Murshidabad, and the 24-Parganas. Explanation should have been given in all the above cases if any were forthcoming. In estates held direct by Government in the 24-Parganas, the collections both current and arrear were bad, and in Murshidabad they were not good. The arrear collections in Jessore were poor. It is understood that a change has been made in the method of collection in the Government khas mahals of Mursidabad and the 24-Parganas, and it is desired that the Commissioner will carefully watch the working of the new arrangements. Divisional averages of 86 and 74 per cent. for current and arrear collections in the khas mahals are not satisfactory in a year of admitted prosperity. The sums allotted for the improvement of Government estates in sanitation roads and education were spent save in Murshidabad, the principal work undertaken being the construction of the Orphananj Market in the 24-Parganas. The raiyats of the khas mahals, with few exceptions, enjoyed a high degree of prosperity. In the

permanently-settled mahals relations between landlord and tenant were for the most part satisfactory. In the Sundarbans, however, it is reported that the lessees of waste lands, who pay 4 annas a bigha to Government, have so delegated their proprietary rights to a chain of under-tenants, that the actual cultivators, who are also the actual clearers, have to pay as much as Rs. 8 a bigha; and consequently the Board of Revenue has decided, on the recommendation of the Commissioner, to have a survey and settlement, with a record-of-rights, in those lots in which the evil has led to crime.

Of Rs. 8,986 received from raiyats as landlords' fees, only Rs. 410 were accepted by the landlords, probably owing to their reluctance to acknowledge the custom of unrestricted transfer.

The current demand for the road and public works cesses is over 9 lakhs, the collections $9\frac{1}{2}$ lakhs, and the arrears Rs. 133,000, or 14·7 per cent. The collections were good in Nadia, and poor in the 24-Parganas and Jessore. The poor arrear collections in Murshidabad should also receive the attention of the Collector. The appendix on the working of the Certificate Act has not been analysed by the Commissioner, though it is a branch of collectorate work to which great importance is attached. The number of cases for disposal in the year increased, in the 24-Parganas to 8,855, in Nadia to 2,559, in Jessore to 3,610, and in Khulna to 2,470 whilst they fell to 4,578 in Murshidabad. In the 24-Parganas there were 3,160 pending at the close of the year. It is to be feared that the defaulters of the 24-Parganas are less unsophisticated than those of the other districts, as they waited much longer before paying. The best results were obtained in Murshidabad and Khulna, where the Act appears to have been vigorously enforced.

8. *Wards and Trust Estates.*—The release of the Bhawanipur estate in a good financial condition in February 1899 reduced the number of estates under the Court of Wards to two. The Syedpur estate, which supports the Mohsin Endowment Fund, is also managed by Government. The current demand of the whole of the estates was Rs. 5,83,609 and total collections Rs. 5,99,822, while remissions amounted to Rs. 3,15,050, of which nearly five-sixths related to the Sridharpur estate. The balance at the close of the year stood at 9 lakhs as compared with the previous year's balance of Rs. 12,34,000. The surplus on the year's working was Rs. 38,595, and debts to the amount of Rs. 66,027 were paid off.

The Sridharpur estate appears to be in a bad condition; the collections decreased, and in consequence the Government revenue could not be paid. It appears, however, that since the close of the year radical measures have been taken to improve matters. Collections were much better in the Syedpur estate, and all the customary demands were easily met. Progress was also made in clearing off the debts of the Satkhya estate.

9. *Excise, Stamps, and Income tax.*—In the revenue obtained from excise the ground lost in the previous year was, owing chiefly to the good harvests, more than regained, and the total revenue was over 39 lakhs. The only important decrease was under the head of rum and imported spirits, a great falling off having occurred in Calcutta, for which no confident explanation has been offered. It is desired that this trade may be carefully watched. The greatly increased consumption of country spirits is attributed to the return of prosperity. There was a large increase in the consumption of salt in the protected area, due partly to the vigilance of the staff, but chiefly to the prosperity of the people. A great decrease occurred in the sale of stamps, slight in Murshidabad, but amounting to Rs. 2,84,716 in Calcutta. The sale of non-judicial stamps decreased in all districts, which may be taken to mean that fewer mortgages were executed owing to the return of good crops. The falling off in Calcutta is attributed to the comparative dislocation of business which attended the plague scare. The number of prosecutions for breaches of the stamp laws fell off, but the number of cases in which insufficiently stamped documents were seized greatly increased, and the Lieutenant-Governor is glad to see that greater care is being exercised by Judicial officers in the examination of the documents filed before them. The amount of income tax collected was Rs. 24,73,760—an increase of 2·4 per cent. on the previous year. The gross demand increased by 3 per cent., of which almost all occurred in Calcutta. One lakh was not collected, but

in Murshidabad there were no arrears, and Nadia did well. Collections were worst in Calcutta.

10. *Communications and Public Works.*—The District Boards maintained the existing roads, and also spent more money than in previous years on arboriculture. No new railways were made during the year; but the Ranaghat-Krishnagar light railway was completed, though it was opened after the close of the year. A retired embankment is being constructed at Bhagwangola in Murshidabad, and will be completed this year.

11. *Education.*—The total number of pupils on the rolls at the end of the year was 201,828 (or, according to the returns in the appendix, 201,209) as compared with 201,177 in the previous year. The percentage of boys of a school-going age who were at school was 31·6. Little alteration occurred in their distribution between English, vernacular and classical schools. The most notable increase was in the number of pupils attending high English schools. There was a small decrease in the number of girl-pupils; and the vernacular schools also lost ground. The Koran schools apparently decreased by half, and lost the same proportion of scholars; while an alteration in the system of classification conceals the progress of the Sanskrit tols. The Muhammadan pupils achieved a greater measure of success in the public examinations, and their relative numbers did not decrease. The total expenditure aggregated over 11 lakhs.

12. *Dispensaries and Hospitals.*—The total number of these institutions which were open during the year was 69, though returns have been submitted of 66 only. The total income was Rs. 1,16,863, and the total number of patients treated was 333,673. The corresponding figures for last year were Rs. 1,43,933 and Rs. 3,48,792. There was thus a falling off in each respect, which the Commissioner attributes in part to the plague scares. No notable advance appears to have been made during the year. The Lieutenant-Governor would commend to the notice of the Municipalities and District Boards the action of the Mymensingh and other District Boards in appointing trained female medical officers for each subdivision, which he considers to be an excellent policy.

13. *Local Self-Government.*—Little that is new is to be said about the working of the various Boards. Judging from the attendance of members, it would seem that in several instances less interest was taken in the proceedings than in the previous year. The Lieutenant-Governor is pleased to see that the municipalities have made vigorous efforts to collect their taxes, and achieved much success, due to a great extent to the careful supervision of the Commissioner, which will, he knows, not be relaxed. Mr. Buckland has added little to the comprehensive general remarks on the Local Self-Government bodies contained in his report last year, and has seen no reason to modify the conclusions he then set forth.

14. *Employment of Muhammadans.*—The number holding ministerial appointments in the Division decreased by 4. There was an increase of 2 in the 24-Parganas, and a decrease of 1, 2 and 3, respectively, in Jessore, Khulna, and Nadia. In the two last-named districts the number has been lowered to less than 10 per cent., and is unduly small, and the same is still more the case in the 24-Parganas. The District Officers are requested to bear in mind the importance of encouraging Muhammadans, so far as regard to the efficiency of their staff will permit.

15. *Conduct of Zamindars.*—Though the great majority of the zamindars of the Presidency Division are non-resident, and though several, by the inadequate remuneration which they give to their servants, tacitly connive at the acts of oppression of which the latter are frequently guilty, yet the Lieutenant-Governor is pleased to see the names of so many gentlemen in the list of those who, by their just treatment of the raiyats on their estates and their liberality in all public affairs, have augmented the esteem in which they were previously held. The Nawab Bahadur of Murshidabad has long been conspicuous in the Province for those qualities; and the Maharaja of Kasimbazar is worthily following in the footsteps of his predecessor. The Dhankuria zamindars of Basirhat, the Mandals of Baruipur, Rai Hari Charan Chaudhuri of Nakipur, the Raja of Naldanga and others are said to have watched well over the interests of their tenants; and the Maharaja Bahadur of Nadia is reported to be a liberal landlord.

Those zamindars who are reported to be directly, or through their agents, oppressive and unjust, thereby forfeit, in the eyes of Government, that title to consideration which they would otherwise enjoy.

The thanks of the Lieutenant-Governor are due to Mr. Backland for the carefulness with which he has watched over the interests of the Division during the year, and for the complete report which he has presented, extracts from which are published for general information.

By order of the Lieutenant-Governor of Bengal,

F. A. SLACK,

Offg. Secy. to the Govt. of Bengal.

*Extracts from the Annual General Administration Report of the Presidency
Division for 1898-99.*

III.—WEATHER AND CROPS.

13. The average rainfall in the Division was greater than in either of the two preceding years, being 65·3 inches against 61·4 inches in 1897-98 and 46·3 inches in 1896-97. The heaviest rainfall (97·04 inches) was at Mollahat in the Bagerhat subdivision of the district of Khulna, and the smallest (about 51 inches) at Barasat and Barrackpore in the 24 Parganas and Kushtia in Nadia. It was, on the whole, more favourable to the crops grown than in the two preceding years. In the 24 Parganas the average rainfall was less than in the previous year, being 56·7 inches against 59·8. The rainfall was evenly distributed throughout the district with the exception of the Diamond Harbour subdivision, where it was deficient in April and May, and also in September and October; otherwise the rainfall was sufficient during the ploughing and sowing seasons. The average rainfall recorded in Nadia was almost the same as in the previous year, viz., about 59 inches. It was seasonable and sufficient, except in August, when heavy showers caused the rivers to inundate considerable areas, and thus damage to a certain extent the *bhadoi* rice in thanas Gangni and Tehatta and the jute crop in the Ranaghat subdivision. In Murshidabad the rainfall was much greater than in the preceding year, being 72·5 inches against 51·1. There was a large flood which damaged the *aus* crops in the *Bagri*, though it increased the subsequent outturn of the *rabi* crops by fertilizing the land. In Jessore, 65·1 inches of rain fell during the year against 62·8 inches in 1897-98. The rainfall was largest in June, July, and August, and was generally favourable to the crops grown in the district. The average rainfall in Khulna was a little less than in the previous year, being 73·3 inches against 75. It was, however, equally distributed, and was favourable to the cultivation of *aus* and *aman* paddy.

Under the instructions conveyed in Government Orders No. 1 T.-R., dated the 10th June 1898, the outturns of the different crops are shown in percentages for the past three years, 100 being taken to represent a normal crop, and the outturn for each year being stated as a percentage of that crop. The average outturn of *aman*, which is the staple food in the Division, was 101 per cent., against 100 in 1897-98 and 43 in 1896-97. The *bhadoi* or *aus* crop yielded an average outturn of 93 per cent., or 7 per cent. more than in 1897-98 and 38 more than in 1896-97. The jute crop was 87 per cent., against 84 in 1897-98 and 76 in 1896-97, and the *rabi* crops 90 per cent., against 84 in 1897-98 and 48 in 1896-97. The other crops grown in the Division are of minor importance. Indigo is grown in Nadia, Murshidabad, and Jessore only. As compared with the previous year, the outturn of *aman* increased in Nadia and Khulna by 2 and 16 per cent., respectively, while in Murshidabad and Jessore it decreased by 3 and 12 per cent., respectively. In the 24 Parganas the outturn remained stationary. The outturn of *aus* was greater in all the districts except Murshidabad, where it fell off slightly.

IV.—PUBLIC HEALTH.

14. The following statement compares the recorded mortality in the districts of this Division during the past three years:—

DISTRICT.	Number of deaths from fever.			Number of deaths from cholera.			Number of deaths from other causes.			Total number of deaths from all causes.			Average of the past two years 1896 and 1897.
	1896.	1897.	1898.	1896.	1897.	1898.	1896.	1897.	1898.	1896.	1897.	1898.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
24 Parganas	37,919	34,067	33,404	11,043	3,074	1,020	6,920	7,281	7,190	55,882	40,213	42,136	51,047
Nadia	41,402	31,325	28,059	10,720	3,570	409	6,930	7,224	5,740	59,458	42,019	30,304	51,184
Murshidabad	30,441	27,509	24,859	4,959	2,222	185	5,539	5,875	5,780	40,839	35,006	30,824	38,273
Jessore	56,173	51,333	50,163	8,199	5,967	770	4,434	5,793	6,376	70,220	63,013	57,017	62,866
Khulna	27,951	27,043	21,886	6,740	5,750	669	7,407	7,515	8,634	42,164	40,308	34,211	41,236
Total	196,296	172,287	161,073	41,673	11,483	2,758	31,204	34,298	35,661	269,163	228,068	201,092	248,610
Ratio of deaths per mille of population	34·0	31·9	29·5	5·3	2·7	·4	3·9	4·3	4·5	34·2	29·08	25·8	31·7

The general health of the Division was distinctly better than that of the two preceding years. The total number of deaths recorded was 201,092 or 25·8 per mille of population, against 228,058 or 29·03 per mille in 1897 and 269,163 or 34·2 per mille in 1896. The number of deaths from fever was 161,672; from cholera 3,758, and from other causes 35,661, against 172,287; 21,483; and 34,288, respectively, in 1897. The decrease in mortality from fever and cholera is chiefly due to the absence of any of these diseases in a widely epidemic form.

In the 24-Parganas the total number of deaths was 42,136, against 46,212 of the preceding year, showing a decrease of 4,076. Fever accounted for 33,404 deaths, against 34,957. As usual, the Diamond Harbour subdivision shows the lowest mortality from fever and Barasat the highest. The autumn and cold weather are the deadly seasons, December being the worst month of all. Efforts are being made to improve the drainage of Barasat, which has an evil notoriety for fever at present. The decrease in mortality from cholera was very marked, being 1,626, against 3,974 in 1897, or 59·08 per cent. lower than the mortality of the previous year. The subdivisions of Barasat and Diamond Harbour suffered most from this disease, which, however, nowhere assumed an epidemic form. Small-pox accounted for 100 deaths against 151 in 1897, and bowel-complaints 1,137 against 1,286. The mortality from other causes was 5,869, against 5,844 in the previous year. The number of cases vaccinated was 43,462, of which no less than 43,068 were successful.

The general health of the district of Nadia was exceptionally good, the total number of deaths being 36,304, against 42,919 in 1897. The mortality from fever fell from 31,525 to 28,059. The urban areas suffered more than the rural. There was, however, a virulent outbreak of malarial fever in some villages in the Khoksa outpost in the Kushtia subdivision after the subsidence of the floods, the death-rate in at least four of them being 100 per mille of the population. The months of March, April and November contributed most to the death-rate from fever. The decrease in mortality from cholera was remarkable, being 499, against 3,570 in 1897. The disease was present from the beginning of the year and reached its highest point in May. It then fell suddenly in June, and began to rise again in November. Small-pox was much more prevalent during the year, causing 277 deaths, against 87 in 1897. Deaths from this disease occurred most in March.

In Murshidabad the total number of deaths was 30,824, or 4,782 less than in the previous year. Fever caused 24,859 deaths, against 27,509 in 1897, and cholera 185, against 2,222. Deaths from fever occurred most in the months from September to December. The comparative freedom from cholera is said to be due to the fact that rain fell nearly every month. The villages suffered more than the towns, where two cases of deaths only were recorded. The total number of deaths from small-pox was 118, against 167 of the previous year.

The total number of deaths recorded in Jessore was 57,617, against 63,013 in 1897, of which fever contributed 50,463 deaths, against 51,253 in the preceding year. The largest number of deaths from this cause occurred from September to December. The subdivision of Magura suffered most and that of Bangaon least. Cholera accounted for 179 deaths, against 5,967 in 1897, and small-pox 57, against 70. The total number of deaths from bowel-complaints was 51 only, against 113 in the previous year. The mortality from all causes registered in Khulna was 34,211, against 40,308 in 1897. Fever accounted for 24,888 deaths, or 2,155 less than in the previous year. The mortality from cholera was remarkably low, being 669, against 5,750 in 1897. There was no epidemic of any description during the year. The number of deaths from other causes slightly increased, being 8,654, against 7,515 in the previous year.

15. Registration is worst in the municipal areas, where it is in the hands of the police. In these areas the reporting of births and deaths is legally incumbent on parents and friends under Act IV (B.C.) of 1873, and an endeavour is being made in the 24-Parganas to enforce the legal penalties, and thus induce an improvement. In rural areas the present arrangement is that village *chaukidars* keep a register of deaths and births, which is supposed to be tested by the police and the Vaccination Department. All that can be done is to reward or punish

chaukidars in order to encourage or compel them to report. The police have little time for these duties, and the registers of the chaukidars practically remain unchecked. In Murshidabad Mr. Egerton has made it one of the duties of the dafadars recently appointed in the district to check all death and birth entries in their respective unions, and this, it is believed, will have a very good result on the registration of vital statistics so far as the rural areas are concerned.

V.—MATERIAL CONDITION OF THE PEOPLE.

16. The condition of the people during the past year showed an improvement over the year preceding. The crops were good, and the prices of food-grains ruled lower than they had done for some time. In the 24 Parganas there was ample employment for the labouring classes in the fields, on the roads under the District Board, and in the mills. The general prosperity was not, however, shared by the middle or *bhadrolog* class, whose incomes are stationary, while their style of living seems to be improving and their expenditure on marriages to be becoming more extravagant. This is of course largely owing to their own folly. The people in Nadia had already recovered from the effects of the famine before the close of the year 1897-98. During the year under review, their position has been further improved by excellent crops of all descriptions. Mr. Gait reports "the people are now as well off as they are ever likely to be so long as the *utbandi* system prevails and their present improvident habits continue." In Murshidabad owing to plentiful crops, low prices of food-grains, and the non-appearance of any disease of a virulent type, both the labouring and the agriculturist classes, which form the bulk of the population, passed the year in ease and comfort. Towards the middle of the year the people of parts of the district suffered from floods, and agricultural loans to a limited scale had to be advanced, but the injury done to the crops was soon after compensated by the abundant produce of the *rabi* crops on the lands inundated. The bulk of the population of Jessore are agriculturists, and their prosperity depends upon the outturn of the crops grown. The principal agricultural products of the district are *aman*, *aus*, jute, indigo, oilseeds, pulses, millets and tobacco. Sugar manufacture also plays an important part in the economic conditions of the district. It keeps about 50 per cent. of the population engaged from the middle of October to the middle of March. The Subdivisional Officer of Jhenida writes that the creation by the zamindars of numerous *gantis* and other undertenures is gradually reducing the prospects of actual cultivators, driving them to expensive litigation with the tenureholders, who try by every means to enhance the rents of raiyats' holdings. There is some force in these remarks, but the raiyats of this district generally know their status according to the Tenancy Act, and contest, very often successfully, all attempts to enhance their rents. The Subdivisional Officer of Narail mentions in proof of the improved condition of the people the fact that the agricultural loans granted by Government in the previous year were fully recovered during the year. The import during the year of a large quantity of European piece goods (valued at about $2\frac{1}{2}$ lakhs of rupees, against $\frac{1}{2}$ lakh of 1897-98) also affords an unmistakeable evidence of the fact that the people had money to spend on luxuries. The people of Khulna are, on the whole, better off than those living in districts further west or north. Labour is dearer, and signs of luxury are to be seen here and there. The district has wonderful recuperative powers. The people are, however, lazy and short-sighted: they will not do any disagreeable work (such as harvesting of paddy, etc.) themselves, and annually there is a large incursion of labourers from outside at the time of sowing and reaping. The fishermen form a large class in this district, and are well off. Goldsmiths and silversmiths appear to be prospering, but, on the other hand, weavers as well as indigenous manufacturers are fast disappearing. Date sugar is manufactured in thanas Magura and Kalaroa, but it is steadily declining, owing to the importation of bounty-fed sugar.

VI.—EMIGRATION AND IMMIGRATION.

17. The number of emigrants registered in the district of the 24-Parganas during the year was 2,389, as compared with 3,709 in the year preceding. Of these, 507 were for the Colonies and 1,882 for the labour districts of Assam,

Cachar and Sylhet, as compared with 806 and 2,903 respectively in the year 1897-98. Of the total number of persons who emigrated during the year, only 4 belonged to this district and the rest to other districts. Besides these, it is stated that 24,913 coolies, as against 94,772 of the previous year, passed through the Barasat subdivision of this district on their way to Assam, Cachar and Sylhet, halting for a short time at the rest-houses at Naihati. This abnormal decrease is attributed to the better outturn of food-grains and the consequent reduction in the prices thereof.

During the year there were five rest-houses, of which one was burnt down. The remaining houses were provided with sleeping accommodation and separate cook-sheds, with an adequate number of latrines. The coolies during their stay in these rest-houses use the water of the river Hooghly for drinking and of tanks and wells for culinary and other purposes. The mehtars of the Naihati Municipality remove the nightsoil as before. There was a cooly cholera hospital in charge of the Civil Hospital Assistant throughout the year, who in addition to his other duties in connection with emigration treated the cooly-patients. There were only ten cases of cholera, all of which recovered, and two cases of small-pox, both of which ended fatally. There was no outbreak of cholera, small pox, or fever in an epidemic form in any of these houses.

As usual up-country men and *dhangars* come to the subdivision of Barasat in large numbers for employment in mills, municipalities, or rural tracts. A considerable number of Cabulis also go there to sell warm clothing and hill fruits, and many of these people have settled down in the vicinity of the mills, where they engage in money-lending. During the transplantation season, coolies from Madras and Orissa come to Diamond Harbour for employment, returning home after the harvest. It is reported that a number of *Bumas* from Chota Nagpur and its neighbourhood have settled down in the *abads* of the Diamond Harbour subdivision.

As regards the other districts, there was no emigration or immigration properly so-called. As usual, during harvest time, the labourers from Nadia and Jessore left their districts for the Sundarbans and other Eastern Bengal districts, including Khulna, for work, but they returned as soon as their work was over. In Jessore some professional earth diggers came from Kushtia and Chuadanga subdivisions of the Nadia district for work, but their number was not large, presumably because they had sufficient work, on account of good crops in their own neighbourhood. Besides these Cabulis and other upcountry hawkers came to these districts as usual.

VII.—PRICES OF FOOD AND LABOUR.

18. Common rice is the staple food of the majority in this Division. The price of this rice, in the 24-Parganas at the beginning of the year, was 10 to 13 seers per rupee, and it fell but little until the new harvest was reaped. Towards the close of the year the price was from 12 to 16 seers, per rupee, against 13 to 13 $\frac{3}{4}$ seers per rupee of the previous year. This is due to the full harvest reaped during the year under report. Although there had been a fall in the price of common rice, as well as of other grains, in the district of Nadia, during the previous year, prices were still high at the beginning of the year under report, when the price of common rice was 12 seers 13 chitaks and gram 16 seers per rupee. In September, when a good *bhadoi* crop was harvested, the price of common rice came down to over 13 seers. It fell still lower when the *aman* crop was reaped in November; and the prices of wheat and gram also went down with that of common rice. In Murshidabad the price of wheat, common rice, and gram fell considerably during the year under report, as compared with either of the two preceding years. This is due chiefly to the good harvests of the year 1897-98, and partly to the good crops of the year 1898-99 which had been in the market for a few months only of the year under report. The average price of common rice in Jessore fell to 18 $\frac{1}{2}$ seers per rupee, from 12 seers in 1897-98 and 9 $\frac{3}{4}$ seers in 1896-97. The prices of other food-grains were also easier. In Khulna the price of common rice was very low after the gathering of the new *aman* crop, being 17 seers per rupee, against 13 seers 8 chitaks in 1897-98 and 10 seers 2 $\frac{3}{4}$ chitaks in 1896-97. This fall in price resulted from the plentiful harvests of rice crops in 1897-98 and 1898-99. Salt was sold somewhat

cheaper in Khulna and Satkhira during the year than in the two preceding years. At Bagerhat the price remained stationary.

The wages of labour, both superior and common, in Nadia, Murshidabad, and Khulna remained almost the same as those of the preceding year. In the 24-Parganas the wages of superior and common masons and of superior carpenters and blacksmiths fell, while in Jessore the wages of superior and common carpenters and of superior blacksmiths rose. It is difficult to explain these fluctuations in the wages of labourers in the different districts of this Division. I think Mr. Hallifax is right when he says that these wages are governed more by custom than by the principle of demand and supply.

VIII.—MANUFACTURES AND MINES.

19. The principal articles of manufacture in this Division are cotton twist and yarn, gunny-bags and cloth, paper, ice, shellac and lac-dye, indigo, silk, sugar and molasses. Of these, cotton twist and yarn, gunny-bags and cloth, paper, ice, shellac and lac-dye were manufactured only in the district of the 24-Parganas, where there were 63 factories at work during the year. In 42 factories work was carried on by shifts and sets, and in 20 by midday stoppages, while one worked at contract rates, as reported last year. Three factories, namely, (1) Gillanders, Arbuthnot and Company's bulk-oil depôt at Budge-Budge, (2) the Chitpur Hydraulic Press, and (3) the Indian Patent Stone Works at Sealdah, were brought under the operation of the India Factories Act, XV of 1881, as amended by Act XI of 1891, and the revised rules made thereunder. Of these three mills, the bulk-oil depôt at Budge Budge was registered on the 23rd March 1898, and the last two, which were removed from the list some years ago, were re-entered in April and October 1898 respectively. The total number of operatives employed in the 63 working factories during the year under report was 80,879, against 80,988 in the previous year. The slight decrease is attributed to the plague scare, which considerably affected the working of the factories in the early part of the year. There was no material change in the rates of wages paid to the operatives employed in factories during the year under report.

20. The following table shows the value of the outturn as returned by the owners of the several mills and factories:—

ARTICLES.	Outturn.			REMARKS.
	1896-97.	1897-98.	1898-99.	
1	2	3	4	5
	Rs.	Rs.	Rs.	
Gunny-bags and cloth ...	2,28,71,075	3,34,95,983	3,03,82,729	* The figures for these are for calendar years.
Cotton twist and yarn ...	77,91,269	80,32,942	62,96,079	
Paper* ...	22,25,116	24,36,119	25,54,405	
Lac* ...	17,85,720	13,67,178	10,85,601	
Leather* ...	14,800	17,550	18,589	
Silk* ...	55,341	1,91,808	1,66,175	

25. Indigo is largely manufactured in the districts of Nadia, Murshidabad and Jessore. The table below shows the state of this industry during the year under report as compared with the two preceding years:—

DISTRICT.	Number of factories.			Produce.			Value.			REMARKS.
	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	
1	2	3	4	5	6	7	8	9	10	11
				Mds.	Mds.	Mds.	Rs.	Rs.	Rs.	
Nadia ...	45	51	47	2,707	2,432	1,689	5,38,364	3,31,686	2,43,740	
Murshidabad ...	24	23*	23	1,686	2,026*	1,739	3,97,327	3,08,418*	2,61,804	
Jessore ...	16	18	11	1,286	1,708	873	2,03,937	2,35,423	1,13,157	
Total ...	81	91	80	5,679	6,261	4,300	11,39,628	9,35,526	6,17,801	

* The discrepancy between these figures and those shown in paragraph 17 of last year's report is due to the fact that some of the factories sent their statistics after the submission of last year's report.

There has been a considerable decrease during the year under report not only in the number of factories, but also in the gross outturn and value. The industry has of late been declining, the cause of depression being its competition with foreign chemical dye, which is steadily making progress.

26. The silk industry is chiefly carried on in the districts of the 24-Parganas and Murshidabad. The following table compares the state of this industry during the last three years:—

DISTRICTS.	Number of factories.			Produce.			Value.			REMARKS.
	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	
1	2	3	4	5	6	7	8	9	10	11
24 Parganas ... Murshidabad...	55	48	47	lbs. 865,919	lbs. 538,175	lbs. 406,658	Rs. 55,341 28,99,231	Rs. 1,01,800 29,73,715	Rs. 1,06,175 26,19,307	The figures are for the calendar year.

As noticed in the previous year's report, the manufacture of silk cloth at Mirzapur, in the district of Murshidabad, is gradually on the decline. The number of pieces of silk cloth manufactured during the year under report was 5,032, valued at Rs. 44,916, against 6,052 pieces, valued at Rs. 45,396 of the preceding year.

27. The table below compares the state of the sugar industry during the last three years:—

DISTRICT.	Number of factories.			Outturn.			Value.			REMARKS.
	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	1896-97.	1897-98.	1898-99.	
1	2	3	4	5	6	7	8	9	10	11
24-Parganas ...	130	90	113	Mds.	Mds.	Mds.	Rs.	Rs.	Rs.	
Nadia ...				44,064	73,475	43,240	3,86,708	3,34,175	2,70,497	
Jessore ...	144	134	131	Statistics not available.						
Khulna ...	Not available.			2,26,150	2,11,422	1,76,098	15,70,080	14,82,323	12,32,476	
				25,700	23,346	23,721	1,70,550	1,04,320	1,47,256	

As in the previous year, the Manager of the sugar mill at Cossipore has declined to furnish the necessary statistics. Sugar is still manufactured from sugarcane and date-juice by primitive native process in the sub-divisions of Basirhat and Barasat in the district of the 24-Parganas. In Nadia, sugarcane is largely cultivated in the Kushtia subdivision and in part of Chuadanga. In the Kushtia subdivision the sugarcane-crushing mill factory worked throughout the year, but information regarding this is not available. It is, however, known that the machines are distributed to local agents, who let them out on hire at a rupee or so a day. The principal centres of the date sugar industry in this district are Santipur, Chakdaha, Kishanganj, Daulatganj, Alamdanga, and Moheshganj, but no statistics are available. The refined sugar manufactories in the district of Jessore did not work during the year under report. This industry has been steadily declining owing to the fall of market caused by the importation of foreign sugar. But it is hoped that the new countervailing duties imposed on bounty-fed sugar imported into the country will facilitate the production of home-made sugar. The brass foundry at Moheshganj in the district of Nadia manufactured iron screws and other requisites for the indigo factories. Brass and bell-metal utensils are manufactured in Nadia and Murshidabad. These articles are sold in the local markets, as well as sent to Calcutta, Rajshahi, and other places. Locks and keys in imitation of Chubb's locks and of really good quality are made at Natagore in the Barasat subdivision of the 24-Parganas and at Jangipur in Murshidabad. Cotton cloth is manufactured in several places in the Division, but the industry is gradually falling off in consequence of the weavers being unable to compete against European imports. The manufacture of blankets is carried on in several places in the district of Murshidabad. Those manufactured at Aurangabad, a village in the Jangipur subdivision, are of superior quality, each piece

being worth Rs. 7 to 8. The clay figures of Ghurni, a part of the Krishnagar town in the district of Nadia, are very much appreciated both here and abroad; they possess no little artistic merit, and are generally considered to be superior to those produced elsewhere in India. Earthen pots of Kaliganj thana, in the Satkhira subdivision of the district of Khulna, are noted for their black glaze, but their manufacture is decaying for want of sufficient encouragement. The other and minor manufactures of this Division are tobacco, mats, cutlery, boats, cart-wheels, ivory works, shell bracelets, pottery, ploughs and other ordinary wood-work. There are no mines in any of the districts of this Division.

IX.—TRADE AND COMMERCE.

28. In compiling the statistics of trade in this Division the instructions contained in the Government circulars No. 785, dated the 12th November 1898, and No. 1, dated the 12th January 1899, have been strictly followed. In this Division the traffic is carried on by rail, the Nadia rivers, and the Calcutta canals. The statistics of traffic carried by different means in each district have been shown in separate statements. Four other statements also are submitted showing the import and export traffic of the Division (excluding local traffic) and those to and from Calcutta. These statements are submitted as appendices to this report. An amalgamated statement showing the traffic in this Division, excluding local traffic, is given below :—

Number.	ARTICLES.	IMPORTS.					EXPORTS.				
		By rail.	By Nadia Rivers.	By Canal.	Total.	Corresponding total for 1897-98.	By rail.	By Nadia Rivers.	By Canal.	Total.	Corresponding total for 1897-98.
1	2	3	4	5	6	7	8	9	10	11	12
1	Rice	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
2	Paddy	1,50,237	75,416	50	2,25,703	2,25,703	2,25,585	4,096	3,00,129	11,80,810	8,22,616
3	Wheat	5,02,403	26,008	13,090	5,41,501	5,41,501	13,593	2,057	5,41,391	5,56,981	2,31,679
4	Gram and pulse	4,405	1,318	...	5,723	5,723	40,036	10,480	...	50,646	3,373
5	Other food-grains	30,392	626	517	31,535	31,535	76,366	1,87,188	6,233	11,31,037	9,50,746
6	Jute, raw	7,149	1,089	...	8,238	8,238	9,365	4,045	...	66,882	14,023
7	Gunny-bags	8,06,486	3,403	92,580	9,02,469	13,78,892	8,24,273	55,797	1,93,300	8,78,370	20,29,298
8	Linseed	51,090	820	...	51,910	51,910	34,602	1,93,439	15	1,93,454	62,859
9	Mustard seed	60,060	808	...	70,538	70,538	8,23,794	59,742	3,320	3,86,838	1,40,135
10	Tea, Indian	48,387	23,503	3,976	75,866	75,866	25,840	1,063	3,200	30,133	59,000
11	Cotton, raw	100	...	...	100	1,67,133	1	...	...	1	246
12	Silk, raw	94,074	...	...	94,074	94,074	3,280	...	1,280	4,476	6,753
13	Sugar, refined	2,453	440	...	2,893	2,893	6,034	...	...	6,034	6,440
14	Do., unrefined	17,320	408	...	17,728	17,728	2,084	270	7,000	9,324	15,022
15	Tobacco, manufactured	53,825	9,642	970	64,437	64,437	3,55,304	4,062	1,57,232	4,20,586	5,05,860
16	Do., unmanufactured	1,144	...	...	1,144	1,144	...	...	...	...	...
17	Indigo	29,976	6,120	3,945	40,041	40,041	24,040	175	900	25,724	24,788
18	Cotton piece-goods, in bales	61	...	...	61	61	4,069	...	...	4,069	5,349
19	European	1,14,062	...	683	1,14,745	1,08,226	388	10	...	388	400
20	Cotton piece-goods, in boxes	893	...	...	893	1,334	...	...	...	...	6
21	Indian	1,063	...	...	1,063	1,210	4,592	6	...	4,598	4,494
22	Cotton twist and yarn, European	85	...	...	85	10	15	...	...	15	7
23	Do., Indian	25,403	...	...	25,403	20,734	67	...	...	47	25
24	Salt	13,317	...	...	13,317	18,661	33,908	...	...	55,982	44,679
25	Kerosine oil	4,01,877	49,109	84,404	5,35,390	5,91,118	2,107	45	...	2,152	3,494
26	Coal and coke	18,447	1,067	10,290	29,804	38,824	15,77,863	193	34,550	16,12,618	17,49,730
	Total	1,91,88,045	35,982	84,484	1,92,78,511	1,70,45,403	87,459	76,116	...	1,33,575	1,05,638

29. There was an increase in the import of linseed, cotton (raw), sugar (refined and unrefined), tobacco (manufactured), indigo, cotton piece-goods, European (in bales), Indian cotton piece-goods (in boxes), European cotton twist and yarn, and coal and coke, while there was a decrease in the import of all other articles. As regards exports, there was a decrease in jute (raw), mustard seed, tea, Indian, cotton (raw), sugar (refined and unrefined), tobacco (manufactured), indigo, European cotton piece-goods (in bales and boxes), salt, and kerosine oil, while there was an increase in all the other articles. The decrease in the import traffic of rice, paddy, wheat, gram and pulse, and other food-grains, with a corresponding increase in export, may be attributed to the plentiful harvests of the year under report. In the two preceding years scarcity prevailed more or less throughout the Division, and it became necessary to import articles of food to meet the wants of the people. The decrease in the jute traffic may be explained as being due to the fact that after the famine, which preceded the year under review, the people sowed with food crops a larger area of land and set apart a comparatively smaller area to the cultivation and growth of jute. The outturn was therefore less,

and consequently there was a decrease in the trade. In sugar, both refined and unrefined, there was an increase in the import and a decrease in the export during the year, owing probably to the gradual displacement of the country-made sugar by foreign bounty-fed sugar. The decrease in the export of indigo year after year shows that the production of this valuable commodity in some of the districts of this Division is steadily declining. The increase in the import of European cotton piece-goods may be ascribed to the better condition of the people during the year. The decrease in the import of salt may be partly due to the establishment of a salt warehouse in the district of Backergunge, which formerly received its supply from Khulna, but now receives it direct. The large increase in the coal and coke traffic was due to the greater demand for these articles for steamer, railway, brick manufacturing and cooking purposes. The fluctuations in the export and import of other articles do not call for any special remarks.

30. The Collector of the 24 Parganas reports that, besides the 24 staples enumerated in the statements prescribed by Government, there are other articles, some of them important, in which traffic is carried on between his district and Calcutta along the undermentioned eleven main routes of the district, viz., (1) Kamardanga, (2) Behala, (3) Kowrapookur khal, (4) Kowrapookur road, (5) Garia, (6) Bon Hooghly, (7) Moti jhil, (8) Jingerpole, (9) Matiabrooz ghat, (10) Matiabrooz road, and (11) Nemak Manal ghat. Of these the principal articles are (1) lime and limestone, (2) fresh fruits, other than cocoanuts and betelnuts, (3) iron, (4) firewood, (5) bricks and tiles, (6) hides, and (7) spirits. The following table shows the imports and exports of these articles as registered along the abovementioned routes during the past two years :—

ARTICLES.	IMPORT FROM CALCUTTA.		EXPORT TO CALCUTTA.	
	1897.	1898.	1897.	1898.
1	2	3	4	5
	Mds.	Mds.	Mds.	Mds.
1. Lime and limestone ...	1,55,246	1,85,750	50,147	16,426
2. Fresh fruits other than cocoanuts and betelnuts ...	1,77,175	2,04,138	6,85,511	7,72,860
3. Iron ...	36,934	43,494	21,855	4,617
4. Firewood ...	84,348	95,883	4,41,541	3,58,824
	No.	No.	No.	No.
5. Bricks and tiles ...	1,781,407	869,718	11,243,425	13,201,975
6. Hides ...	1,972	1,847	90,254	148,544
	Ra.	Ra.	Ra.	Ra.
7. Spirits ...	28,596	39,629	56,371	46,627

The Collector of Murshidabad states that the river traffic of his district was confined, as a rule, to a few months of the year during the rainy season. The figures given by him and incorporated in the divisional amalgamated statement, do not include the large import of rice, paddy and the *rabi* crops, such as wheat, gram, linseed and mustard seed, which are annually carried on by carts.

The Collector of Jessore has again invited attention to the necessity of opening out Muchikhali channel, which connects the Madhumati with the Nava-ganga. This channel remains silted up during the dry season greatly to the injury of the local trade.

The Collector of Khulna reports that a good deal of import and export traffic of the district is carried on by country boats, but no statistics are procurable for want of registering stations. Fish, betelnuts and molasses are largely exported from this district in addition to the articles shown in the statements.

A divisional summary is given in the following table showing the export from the districts of the Presidency Division to Calcutta during the years 1897-98 and 1898-99:—

Number	ARTICLES.	1897-98.	1898-99.	REMARKS.
1	2	3	4	5
		Mds.	Mds.	
1	Rice	31,14,054	36,92,796	
2	Paddy	3,73,263	7,63,536	
3	Wheat	23,068	1,37,064	
4	Gram and pulse	13,04,727	15,58,435	
5	Other food-grains	11,146	63,327	
6	Jute, raw	38,66,985	19,02,727	
7	Gunny-bags	No. 6,649,989	No. 10,092,134	
8	Linseed	Mds. 311,998	Mds. 6,58,923	
9	Mustard seed	81,106	73,181	
10	Tea, Indian	85	1	
11	Cotton, raw	29,688	20,784	
12	Silk, raw	7,363	14,653	
13	Sugar, refined	73,681	61,020	
14	Do, unrefined	5,31,528	5,03,935	
15	Tobacco, manufactured	84,149	93,748	
16	Do., unmanufactured	71,118	7,821	
17	Coal and coke	1,10,110	1,02,007	
18	Indigo	1,258	4,318	

31. The imports of various articles in the Presidency Division from Calcutta is shown in the following table for the two years 1897-98 and 1898-99:—

Number.	ARTICLES.	1897-98.	1898-99.	REMARKS.
1	2	3	4	5
		Rs.	Rs.	
1	Cotton piece-goods, European	84,49,297	91,32,052	
2	Ditto, Indian	58,157	55,877	
3	Cotton twist, European	Mds. 30,623	Mds. 37,233	
4	Ditto, Indian	31,598	13,253	
5	Salt	8,00,300	8,43,266	
6	Kerosine oil	11,02,278	11,23,233	
7	Gunny-bags	No. 1,094,112	No. 1,783,107	

As Calcutta is the centre of trade, the explanation of fluctuations of the divisional trade, given in paragraph 29 of the report, applies to the Calcutta trade also.

XIII.—CRIME.

39. The number of cognizable offences reported in this Division during the year was 20,833, against 22,734 in 1897, showing a decrease of 1,901 cases. The decrease occurred in all the districts, and chiefly in burglary and theft cases. The Magistrates of the 24-Parganas and Khulna ascribe the decrease to better supervision over bad characters during the year, but it seems to me that the real explanation lies in the fact that the increase in the number of cases

in 1897 was abnormal and due to the distress that prevailed in that year, the number of cases for 1896 and 1897 being 16,758 and 17,363 respectively. The number of cases declared false in this Division was 665, as compared with 780 in the year preceding. Of these, 133 were in the 24-Parganas, 150 in Nadia, 98 in Murshidabad, 190 in Jessore, and 94 in Khulna, as compared with 158, 270, 106, 153 and 93, respectively, in the previous year. The Magistrate of Nadia reports that he has impressed upon all subordinate Magistrates the necessity of carefully satisfying themselves that the cases are really false before ordering them to be recorded as such. Prosecutions were instituted in 78 cases, or 11·7 per cent., against 5·1 per cent. in 1897. Of these, 11 were in the 24-Parganas, 22 in Nadia, 9 in Murshidabad, 14 in Jessore, and 22 in Khulna, as compared with 3, 8, 11, 6 and 12, respectively, in the year preceding. The number of cases in which convictions were obtained was 3 in the 24-Parganas, 8 in Nadia, 3 in Murshidabad, 7 in Jessore and 10 in Khulna, against 1, 4, 2, 3 and 4, respectively, in 1897. It is satisfactory to note that the percentage of prosecutions in false cases increased from 5·1 to 11·7, but still I do not think that full use was made of the provisions of section 211 of the Indian Penal Code. Compensation under section 250 of the Criminal Procedure Code was given in 55 cases in the 24-Parganas, 37 in Nadia, 9 in Murshidabad, 26 in Jessore, and 17 in Khulna, against 48, 26, 24, 32 and 12 respectively, in the year preceding. With the exception of Jessore there was an increase in all the other districts. The provisions of this section should, I think, have been more freely used. The Magistrate of Khulna reports that he has drawn the attention of all his subordinate Magistrates to this matter, and he hopes that better results will be obtained in the current year. The total number of cases in which the police abstained from making enquiry was 794, or 3·8 per cent., against 1,367, or 6·0 per cent., in 1897, showing a decrease of 573 cases. Of the total number of cases, 151 were in the 24-Parganas, 251 in Nadia, 99 in Murshidabad, 152 in Jessore and 141 in Khulna, against 327, 459, 235, 153 and 193, respectively, in the year preceding, showing a decrease in all the districts. The decrease may be due to a check placed on refusals to enquire in burglary cases. No case of abuse of the power under section 157, Criminal Procedure Code, came to light. The number of persons arrested during the year was 16,037, as compared with 16,017 in 1897. Of these, 15,250 were sent up for trial, against 14,933 and 10,368 were convicted, against 10,201 in the previous year, the percentage of convictions being 67·9, against 63·6 in the year preceding. Taking the districts separately, the percentage was 72·8 in the 24-Parganas, 67·3 in Nadia, 79·6 in Murshidabad, 56·6 in Jessore and 56·3 in Khulna, against 70·6, 68·5, 82·8, 55·5 and 59·9, respectively. The total number of true cases of murder reported in this Division was 43, against 60 in 1897. Of these, 10 were in the 24-Parganas, 5 in Nadia, 8 in Murshidabad, 8 in Jessore and 12 in Khulna, as compared with 14, 3, 15, 11 and 17, respectively. The number in which convictions were obtained was 2 in the 24-Parganas, 2 in Nadia, 1 in Murshidabad, 1 in Jessore and 7 in Khulna. The number of true cases of dacoity reported in this Division was 36, against 49 in 1897. Of these, 22 were in the 24-Parganas, 6 in Nadia, 4 in Murshidabad, 4 in Jessore and nil in Khulna, against 15, 6, 9, 18, and 7, respectively, in the preceding year, showing an increase in the districts of the 24-Parganas and Murshidabad, and a considerable decrease in Jessore and Khulna; the number of cases in Nadia remained constant. Out of 36 cases, convictions were obtained in 14 cases, against the same number in 1897. Of these, 10 were in the 24-Parganas, 1 in Nadia, 1 in Murshidabad and 2 in Jessore. The Magistrate of the 24-Parganas reports that, in spite of the conviction of a large number of offenders who were sentenced to transportation or to long terms of imprisonment, the number of dacoities in his district has increased. He observes that the neighbourhood of Calcutta, with its separate police administration, the large number of up-country men employed in the districts (many of them of the worst character and fugitives from justice in their native districts), and the facilities of communication by rail and river, all combine to make the offence easy to perpetrate and difficult to detect. The number of cases of rioting in this Division was 502, as compared with 542 in the year preceding, showing a decrease of 40 cases. Of the 502 cases, 92 were in the 24-Parganas, 120 in Nadia, 40 in Murshidabad,

140 in Jessore and 110 in Khulna, against 111, 68, 49, 154 and 160, respectively, in the previous year, showing an increase in the district of Nadia and a decrease in all the other districts; the largest number of cases occurring in the district of Jessore. No explanation as to the increase in the number of rioting cases has been given by the Magistrate of Nadia. The decrease in the other districts may be attributed to vigorous precautions having been taken under sections 107 and 145 of the Criminal Procedure Code. Of the rioting cases, 2 in the 24-Parganas, 2 in Nadia, 7 in Jessore and 6 in Khulna ended in loss of life. There were no caste or religious disputes in any of the districts during the year. The number of cases instituted during the year, under sections 106 and 107 of the Criminal Procedure Code, was 527, against 467 in 1897, and the number of persons bound down was 1,917, against 1,362 in the year preceding, showing an increase of 555 persons. The number of cases of bad livelihood instituted during the year was 662, as compared with 548 in 1897. The number of cases in which conviction followed was 471, against 387 in the year preceding, the percentage being 71·1, against 66·2 of the previous year.

40. The number of non-cognizable offences reported in this Division during the year was 19,978, as compared with 18,586 in the previous year, showing an increase of 1,392 cases, which occurred in all the districts except Jessore, but chiefly in the 24-Parganas, where it is said to be due to the increased number of cases instituted under the municipal laws. The Magistrate of Nadia ascribes the increase to the improved condition of the people, as in the previous year they had neither time nor the money to prosecute petty quarrels in the Courts. The increase in Khulna is reported to be due to a greater number of prosecutions for disobeying summons and to a large increase in the number of proceedings, under sections 107 and 145, Criminal Procedure Code. The other Magistrates have not submitted any explanation of the fluctuation. The number of cases in which the police were employed to make enquiries was 1,139, or 5·7 per cent., as compared with 798, or 4·2 per cent., in the preceding year. Of the 1,139 cases, 354 were in the 24-Parganas, 55 in Nadia, 4 in Murshidabad, 202 in Jessore and 524 in Khulna. The Magistrates of Jessore and Khulna report that the increase was due to a very large number of petitions to bind down persons to keep the peace and regarding disputes about immoveable property having been referred to the police for enquiry. Processes were issued against 25,910 persons, as compared with 20,369 in the previous year, and 16,809 persons actually appeared before Magistrates, against 14,877 in 1897. The increase may be attributed to the increase in the number of cases. The number of persons convicted was 8,647, or 51·4 per cent., as compared with 7,989, or 53·7 per cent. in the previous year.

XIV.—POLICE.

41. The table below shows the strength of the Police force in the several districts of this Division:—

District.	District Superintendent of Police.	Assistant Superintendent of Police.	Inspectors.	Sub-Inspectors.	European constables.	Head-constables.	Constables.	Town chaukidars.
1	2	3	4	5	6	7	8	9
24-Parganas ...	1	1	6	62	1	123	1,008	132
Nadia ...	1	...	5	44	...	49	524	109
Murshidabad ...	1	...	4	40	...	58	589	97
Jessore ...	1	...	5	41	...	37	394	29
Khulna ...	1	...	3	30	...	37	338	49
Total ...	5	1	23	217	1	304	2,798	416
Total for 1897	5	1	23	206	2	311	2,768	416

In the 24-Parganas there was an increase of 1 Sub-Inspector and a decrease of 1 European constable, under Government order No. 1640J., dated

the 18th March 1898. In Nadia there was an increase of 4 Sub-Inspectors and 10 constables, while there was a decrease of 3 head-constables only. The force in Murshidabad was increased by 3 Sub-Inspectors and 20 constables and reduced by 2 head-constables. In Jessore there was an increase of 1 Sub-Inspector and 10 constables. No explanation has been furnished by the District Officers concerned regarding these changes. In Khulna there was an increase of 2 Sub-Inspectors and a decrease of 2 head-constables, according to the recommendation of the Redistribution Committee. Besides the above, 1 Sub-Inspector and 3 constables were sanctioned for the Alaipur floating out-post in Khulna.

42. The following table shows the particulars of punishment of men and officers by dismissal or otherwise, as compared with those of the preceding year:—

		Number dismissed.		NUMBER PUNISHED.			
				Departmentally.		Judicially.	
		1897.	1898.	1897.	1898.	1897.	1898.
1		2	3	4	5	6	7
Officers	...	2	3	64	282	1	...
Men	...	69	90	182	387	49	45
Total	...	71	93	246	669	50	45

It will appear that there was a considerable increase in the number of dismissals and of men departmentally punished during the year, while there was a decrease in the number punished judicially.

43. The following table shows the number rewarded during the year as compared with 1897:—

	1897.	1898.
By promotion	2	5
By money rewards, good-conduct stripes, &c.	444	215
Total	446	220

It is very unsatisfactory to notice that there was a large decrease in the number rewarded during the year. In the 24-Parganas 3 Inspectors, 10 Sub-Inspectors, 7 head-constables and 25 constables received rewards for good service in various cases. In Nadia, Babus Dina Nath Ghosh, Inspector, and Janoki Nath Bose, Sub-Inspector, were specially rewarded Rs. 200 and Rs. 100, respectively, for successfully working up the Malipota currency note forgery case and securing the conviction of most of the accused. They also received Rs. 32-0-6 and Rs. 12-13-0, respectively, from the Commissioner of Police, Calcutta, as rewards in connection with that case. In Murshidabad 6 Sub-Inspectors, 7 head-constables and 17 constables received special money rewards. The Magistrate of Jessore does not report on this head. In Khulna 4th grade Inspector, Babu Keshab Lal Guha, was awarded a gold watch and chain, valued at Rs. 323, for good service rendered in a case of robbery with double murder.

45. The following statement shows the number of rural police in the several districts of this Division, the number punished and the number rewarded:—

DISTRICT.			Number of rural police.	Number punished.	Number rewarded.	Amount of reward.
1			2	3	4	5
						Rs.
24-Parganas	...	...	3,359	1,241	139	497
Nadia	...	...	3,503	1,341	986	2,481
Murshidabad	...	...	3,441	540	51	246
Jessore	...	...	3,704	1,159	501	8,367
Khulna	...	...	2,890	1,219	280	2,561
Total	...	...	16,397	5,500	1,957	9,152
Total for 1897	...	...	16,692	4,731	752	4,176

There was a decrease in the total number of chaukidars as compared with 1897. The decrease occurred in all the districts, except Nadia and Khulna, but chiefly in Murshidabad. In this district there were 3,441 chaukidars, of whom 2,670 were under Act VI (B.C.) of 1870, and the rest held *chakran* lands. Active steps have been and are still being taken to replace *chakran* chaukidars in the Kandi subdivision by chaukidars under the Act. The progress made in this direction is as rapid as can be expected or is desirable, and Government do not think it expedient to hurry on the changes too violently.

46. During the year under report there was an increase in the number of men punished, as compared with the year preceding, in all the districts except Nadia. The Magistrates of the 24-Parganas, Nadia and Khulna are against the imposition of unnecessary fines on these poorly paid officers. Mr. Allen has directed the attention of the District Superintendent of Police to the bad effect upon the *morale* of the force of so many punishments for trivial offences. It is stated that an attempt is now being made to secure regular attendance at parades by rewarding punctual men rather than by constantly fining the unpunctual.

47. It is satisfactory to notice that the number of men rewarded increased during the year. In the 24-Parganas 72 chaukidars were paid money rewards, chiefly for regular attendance, and 67 were rewarded by judicial officers chiefly for good services in criminal, excise and salt cases. It is reported that more attention is now paid to this method of encouraging good work among the rural police. In Nadia 868 chaukidars were given Rs. 2 each for regular attendance. Both the District Magistrate and the District Superintendent of Police attended muster parades and encouraged chaukidars by offering rewards for good work of any kind. In Jessore the system of good conduct stripes started by Mr. Kilby, formerly District Superintendent of Police, has been kept up, and 27 chaukidars now draw good conduct allowance of Re. 1 each a month on this system. The Magistrate of Khulna considers that too much liberality was shown in granting rewards, as Rs. 2,561, against Rs. 1,310 and Rs. 553 in the preceding two years were paid during the year under report.

48. The attempt to enlist men of better castes for chaukidars was maintained in the districts of the 24-Parganas, Nadia and Jessore. In Nadia and Jessore 151 and 22 men of good castes were enlisted during the year. The Magistrate of the 24-Parganas has forbidden the enlistment of men of the lowest castes, viz., *Kaorus* and *Muchis*, as chaukidars, and is trying to improve the status by raising the pay to a minimum rate of Rs. 4 per mensem. None of the other district officers have made any remarks on this subject.

49. *Dafadars* have been appointed in the districts of the 24-Parganas, Murshidabad, Jessore and Khulna. The District Officer of Nadia makes no mention in his report as to whether this system is in force in his district, but from a subsequent communication received from him, it appears that the system is not in force in Nadia. I have desired the Magistrate to give his personal attention to its introduction forthwith. In the 24-Parganas the system has been introduced throughout the district with the exception of some sparsely inhabited villages in the Sundarbans. Unions comprising the beats of about 10 *chaukidars* have been formed, and a *dafadar* has been appointed in each union at Rs. 6 per mensem. In Murshidabad 189 *dafadars* have been appointed on a pay of Rs. 6 per mensem. It is reported that nearly the whole of the district has now been divided into unions with suitable collecting *panchayats* and with one *dafadar* literate and of good caste for each union. The *dafadars* are already beginning to make themselves useful in various ways, and Mr. Egerton hopes for much better results in future. He has asked the District Superintendent of Police to draw up a list of duties for *dafadars*, who should be relieved of the duties of watch and ward. All the work of making up unions, selecting collecting *panchayats*, and appointing *dafadars* having been done personally by the District Magistrate, Mr. Egerton thinks it desirable that according to the present practice the dismissal as well as appointment of *dafadars* should rest ultimately with the District Magistrate, at least for the present. *Dafadars* ought to be made to feel that they have some status, and not to be summarily dismissed on the mere report of the Police, and it is, therefore, better for their dismissal to rest with the District Magistrate, who would of course as a general rule be guided by the recommendation of the District Superintendent of Police in each case. It is stated that the *chaukidars* and villagers seem to understand the system of unions; the *chaukidars* are certainly far more regularly paid than before, and the *dafadars* by checking birth and death statistics, breaches of the Arms Act, etc., are of material assistance to the police. The Magistrate does not see why *dafadars* of high caste, who are in fact of the social position of literate and writer-constables, should not be able to assist in the working of the beat system within their own union, as was proposed by Mr. Henry, the Inspector-General of Police. The *dafadars* have been supplied with uniforms, they always attend parades, and they are content with their pay of Rs. 6 per mensem. The chief feature of the reform, it is stated, is that it has been introduced without extra taxation, and on the whole taxation has been reduced. This is due to the judicious grouping of villages together. From constant local inspection the Magistrate is satisfied that the *chaukidari* tax is now more equitably imposed and more poor people exempted than formerly. The Magistrate has also had *chaukidars* exempted from taxation altogether in *thanas* where he found that they were taxed. This privilege, the Magistrate thinks, is much appreciated by the *chaukidars*, and will tend to raise their status as Government servants. *Chaukidars* ought not to be made to contribute towards their own pay, and it is not intended by Government that they should do so. The Magistrate of Khulna observes that the status of the rural police is improving, and already there are some men of the better classes serving as *dafadars*, and he considers that now the service is sufficiently attractive.

50. No instance of any *chaukidar* having been employed on menial duties in any of the districts came to notice during the year. There has been a considerable improvement in the system of payment of their wages. In the 24-Parganas there were 64 *chaukidars* in arrears of pay for six months and 96 for three months during the year, as against 70 and 412, respectively, in the preceding year. In Nadia one man was in arrear of pay for a period exceeding three months, when the year closed. In Jessore there were only 20 *chaukidars*, as against 447 in 1897, whose pay was in arrear at the end of the year. The Magistrates of Murshidabad and Khulna have made no remarks on this head.

XV.—CRIMINAL JUSTICE.

51. Criminal justice is administered by the Courts of Sessions, Stipendiary Magistrates, Benches of Honorary Magistrates, and Honorary Magistrates sitting singly. The total number of cases tried by Courts of Sessions during

the year 1898 was 203, as compared with 259 in the year preceding. Of these, 130, or 64·03 per cent., ended in conviction, against 69·1 per cent. in 1897. Taking the districts separately, Nadia shows the highest percentage of convictions, being 70·3, and Jessore the lowest, being 58·4. As regards the other districts, the percentage was 67·1 in the 24-Parganas, 62·5 in Murshidabad, and 64·03 in Khulna, against 71·7, 76·0, and 69·1, respectively, in the previous year. Excepting Nadia, where the percentage of convictions was 62·8 last year, all the other districts show a deterioration in this respect. The total number of subordinate Stipendiary Magistrates in this Division at the close of the calendar year was 60, against 59 in the year preceding. Of these, 37 exercised first class, 17 second class, and 6 third class powers. The number of benches was 42, against 43 in the previous year. They were composed of 327 Honorary Magistrates, who were distributed as follows:—

District.		Number of benches.	Number of Honorary Magistrates.
24-Parganas	...	18	133
Nadia	...	10	81
Murshidabad	...	4	32
Jessore	...	7	45
Khulna	...	3	36
Total	...	42	327
Total for 1897	...	43	400

52. During the year the number of benches decreased by one. This decrease was due to the abolition of the Diamond Harbour Independent Bench in the district of the 24-Parganas. Of these benches, 21 exercised 2nd class powers and the same number 3rd class powers. There was also a decrease during the year in the number of Honorary Magistrates. This decrease may be attributed to the fact that the vacancies caused by the resignation and removal from the list of the names of several practising pleaders who became disqualified under the provisions of section 557 of the new Criminal Procedure Code, were not all filled up. Besides the Bench Magistrates there were 36 Honorary Magistrates who were authorized to sit singly, viz., 10 in the 24-Parganas, 10 in Nadia, 11 in Murshidabad, and 5 in Jessore. Of the Honorary Magistrates authorized to sit singly, 2 exercised 1st class powers, 30 2nd class powers, and 4 3rd class powers. As reported last year, the attendance of the Honorary Magistrates authorized to sit singly was generally satisfactory, but those not so authorized were, with a few exceptions, unsatisfactory in this respect. The number of Honorary Magistrates who were warned to be more regular or who were called on to explain their irregularity, came to 10 in the 24-Parganas, 17 in Nadia, 6 in Murshidabad, 7 in Jessore, and 15 in Khulna. Of the Honorary Magistrates in this Division, the following have been specially mentioned by the several Magistrates for their good work. Babu Ramoni Mohan Mullick of Meherpore in the district of Nadia, Babu Radhika Charan Sen and the late Babu Mukunda Lal Barman Bahadur of Berhampore, Babu Monmohan Singh of Jangipur, Babu Akhay Kumar Pain of Kandi, Rai Sitab Chand Nahor Bahadur, Rai Moni Lal Nahar Bahadur, Nawab Syad Zainulabdin Khan Bahadur and Hon'ble Raja Ranajit Singh Bahadur of Lalbagh, Kazi Serajul Huq, Babu Pran Krishna Chatterji, Babu Bisseswar Chakravarti, and Babu Umesh Chandra Das of Khulna. The Magistrates of the 4-Parganas and Jessore do not report on this head.

53. The following table shows the number of cases tried by Stipendiary Magistrates as well as by the several benches and Honorary Magistrates sitting singly:—

District.	Decided by Stipendiary Magistrates.		Decided by Honorary Magistrates.	
	1897.	1898.	1897.	1898.
24-Parganas	13,848	13,462	4,106	3,867
Nadia	2,543	2,497	1,959	2,036
Murshidabad	1,414	1,735	1,413	1,304
Jessore	3,226	2,791	1,402	855
Khulna	1,941	2,080	463	441
Total	22,972	22,515	9,343	8,503

54. There was a decrease in the number of cases decided by Stipendiary Magistrates in the districts of the 24-Parganas, Nadia and Jessore, while there was an increase in Murshidabad and Khulna, resulting in a decrease in the divisional total of 457 cases. There was also a falling off in the number of cases decided by Honorary Magistrates in all the districts except Nadia, where there was a slight increase. The Magistrate of Jessore, where the decrease was most marked under both the heads, explains that this was due to the absence of famine, to good harvests and to successful prosecutions of some bad characters during the year. The Magistrate of Khulna writes that he made over during the year under report a smaller number of cases to the Honorary Magistrates, as the cases tried by them are often unduly protracted.

55. The following table shows the results of trials as regards persons:—

District.	Persons put on trial.		Convicted.		Percentage of convictions.		REMARKS.
	1897.	1898.	1897.	1898.	1897.	1898.	
1	2	3	4	5	6	7	8
24-Parganas ...	21,207	21,094	15,977	16,050	73.3	76.08	
Nadia ...	5,869	5,946	3,577	3,602	60.9	60.5	
Murshidabad ...	3,512	3,905	2,467	2,490	70.2	63.7	
Jessore ...	7,680	5,278	4,232	2,741	56.1	51.9	
Khulna ...	4,004	4,730	2,390	3,031	59.7	64.08	
Total ...	42,272	40,963	28,643	27,914	67.6	68.1	

It will appear from the above statement that there was an improvement in the percentage of convictions in the districts of the 24-Parganas and Khulna, while there was a falling off in all the other districts. It is noticeable that the percentage of convictions is gradually deteriorating in Jessore. It was 60.8 in 1896 and 56.1 in 1897, while it was only 51.9 in the year under report.

56. The table below shows the number of witnesses examined and detained for more than two days during the year as compared with the year preceding:—

DISTRICT.	Number of witnesses examined.		Number detained for more than two days.	
	1897.	1898.	1897.	1898.
1	2	3	4	5
24-Parganas ...	24,553	27,686	2,484	3,573
Nadia ...	12,199	12,558	1,515	1,263
Murshidabad ...	9,980	9,472	660	789
Jessore ...	16,566	14,416	703	478
Khulna ...	13,209	13,883	587	673
Total ...	76,507	78,015	5,949	6,776

During the year the number of witnesses detained over two days shows an increase in the districts of the 24-Parganas, Murshidabad, and Khulna, while in the other two districts it shows a decrease, the result being that the Divisional percentage increased from 7.7 during 1897 to 8.6 in the year under report. The percentage of such detentions in stipendiary courts decreased from 6.3 in 1897 to 5.8, but before Honorary Magistrates it increased from 13.2 to 21.5. The results were worst in the case of Stipendiary Magistrates.

at Basirhat, Babu Mahendra Nath Mukerji (87·2), Babus Dhonesh Chander Rai (22·1), and Hari Chaitanya Ghosh (33·2) at Sadar, Babu Haripada Ghosh (21·9) at Diamond Harbour, Captain Walker (26·6 and 25) at Dum-Dum and Barrackpore, Babu Shyama Charan Dutt (16·4) and Babu Jotindra Nath Gupta (24·1), in the district of the 24-Parganas; Babu Ashutosh Chatterjee at Kushtia (21·5), in the district of Nadia; Babu Jagadis Chandra Sen (29·1) and Mr. B. Allen (16·9) at Jhenida in Jessore, and Babu Sarat Chander Sen Gupta (31·48) at Bagerhat in Khulna. The figures show deterioration in the administration of criminal justice in this Division, as remarked last year, specially in the 24-Parganas, so far as the individual Magistrates named above are concerned; but, as has been remarked before, the divisional percentage has come down from 6·3 in 1897 to 5·8 in the year under report. The high percentage shown against Babu Mahendra Nath Mukerji, Subdivisional Officer of Basirhat, has not been particularly explained by the Collector, but it seems probable that this was owing to the Deputy Magistrate's having joined the subdivision in the last quarter of the year and having had to try cases *de novo* left unfinished by his predecessor. The Magistrate of Nadia does not think that the Magistrates were much to blame for the delays in the disposal of witnesses, as they were mostly cited in highly contested cases. The excellent results achieved by Babu Amrita Lal Mukherjee (1·6) at Barasat, Babu Chandra Nath Ghosh (1·4) at Jangipur, Babu Gati Krishna Neogi (nil) at Magura, Babu Jagat Bandhu Bhattacharjee (1·1) at Bongong, and Babu Krishna Doyal Pramanick (·2) at Satkhira, where the criminal work was considerable, show what can be done by good management. As regards Honorary Magistrates, the following instances were especially unsatisfactory, the more so as the total number of witnesses examined was in several cases very small: 24-Parganas Sadar (46·3), Basirhat (34·4), Diamond Harbour (34·7), Barasat (20·6), Scaldah (28·7), Nadia Sadar (21·1), Meherpore (18·37), Kushtia (38·4), Kandi (27·2), and Jangipur (48·4). The Magistrate of Nadia reports that the detentions before Honorary Magistrates were greatest in the Kushtia subdivision, which he attributes partly to the failure on the part of Maulvi Muhammad Abdulla, the late Subdivisional Officer, to exercise proper supervision over the working of his subordinate Magistrates and partly to his having made over to them for trial cases of too complicated a nature. There was, it is said, a great improvement towards the close of the year, when Mr. Gruning was in charge of the Kushtia subdivision, and it is expected that far better results will be noticed during the current year. The other Magistrates have not explained the unsatisfactory state of things noticed.

57. The following statement shows the number of remands in A form cases during the year under review:—

DISTRICT.	Number disposed of on first day.	NUMBER POSTPONED—							Number pending at the close of the year
		Once.	Twice.	Three times.	Four times.	Five times.	Six times.	Over six times.	
1	2	3	4	5	6	7	8	9	10
24-Parganas	640	338	193	143	80	47	36	79	78
Nadia	305	215	147	87	63	36	28	39	39
Murshidabad	103	151	123	100	62	35	28	33	20
Jessore	209	183	139	101	53	30	17	23	...
Khulna	257	160	133	92	53	38	21	22	21
Total	1,760	1,067	731	523	320	198	130	195	158
Total for 1897	1,761	1,101	848	604	361	215	144	187	243

The percentage of police cases remanded six times and over to the total number of cases disposed of rose from 6·3 to 6·6. Taking district by district, the percentage comes to 7·3 in the 24-Parganas, 6·6 in Nadia, 8·7 in Murshidabad, 4·5 in Jessore, and 5·4 in Khulna. It is very unsatisfactory to observe that while the percentage at Jessore came to 4·5, it was nearly double at Murshidabad (8·7). I think it most probable that in many of these cases a good many of the remands might, with better management, have been avoided.

59. The table below shows the amount of criminal fines imposed and realized during the year as compared with 1897 :—

DISTRICT.	Imposed.		Realized.	
	1897.	1898.	1897.	1898.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
24-Parganas ...	74,148	61,952	63,654	56,808
Nadia ...	16,858	21,488	14,913	20,193
Murshidabad ...	8,960	16,128	7,815	13,579
Jessore ...	16,411	14,770	14,483	13,383
Khulna ...	21,128	22,342	16,454	20,201
Total ...	1,37,505	1,36,680	1,17,319	1,24,164

Except in the districts of the 24-Parganas and Jessore, there was an increase in the amount of fines imposed and realized during the year. Taking the Division as a whole, it appears that of the fines imposed 90·8 per cent. were realized, against 85·3 per cent. in the previous year. The improvement has been shared by all the districts except Murshidabad, where the percentage decreased from 87·2 to 84·1, the largest share (93·9 per cent.) being contributed by the district of Nadia. The Magistrate of Nadia states that the fines were generally imposed with due regard to the circumstances of the accused persons.

60. The following statement shows the number of cases and the amount of compensation paid under section 250, Criminal Procedure Code, in the several districts of this Division during the year as compared with those of the year preceding :—

DISTRICT.	Number of cases.		Amount of compensation.	
	1897.	1898.	1897.	1898.
			Rs.	Rs.
24-Parganas ...	48	55	687	1,016
Nadia ...	26	37	463	604
Murshidabad ...	24	9	412	135
Jessore ...	32	26	2,102	1,614
Khulna ...	12	17	180	85
	142	144	3,844	2,454

The conclusion is forced on me that sufficient attention is not paid by the Magistrates to the provisions of this section of the Criminal Procedure Code.

61. The table below shows the number of cases in which whipping was awarded during the year as compared with the previous year :—

DISTRICT.	1897.	1898.
24-Parganas ...	136	105
Nadia ...	127	72
Murshidabad ...	53	55
Jessore ...	44	36
Khulna ...	47	47
Total ...	407	315

There was a decrease in the number of cases in which whipping was awarded during the year, which is shared by all the districts except Jessore and

Khulna. The Magistrate of Nadia ascribes the decrease to the fact that owing to the famine there was an exceptionally large number of petty thefts in 1897, for which whipping was an appropriate punishment. The number of European British subjects brought to trial during the year was 13, against 16 in the previous year. Of these, 12 were in the 24-Parganas and 1 in Murshidabad. There was no case under the Age of Consent Act in any of the districts in this Division.

XVI.—REGISTRATION OF DEEDS.

62. The statement below shows the administration of the Registration Department in this Division during the years 1897-98 and 1898-99 :—

DISTRICT.	Number of documents registered in—		Receipts in—		Expenditure in—	
	1897-98	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
24-Parganas ...	84,804	74,590	84,532 9 0	76,973 2 0	44,210 15 5	42,790 9 2
Nadia ...	25,781	23,740	27,549 0 0	26,663 0 0	18,254 0 0	18,311 0 0
Murshidabad ...	18,555	16,068	22,501 0 0	19,345 6 0	13,069 0 0	12,209 15 6
Jessore ...	106,296	87,845	72,077 2 0	65,844 6 0	53,860 5 9	48,948 8 8
Khulna ...	51,020	47,165	42,831 0 0	42,060 0 0	28,398 0 0	27,581 0 0
Total ...	283,956	249,404	2,49,400 11 0	2,30,885 13 0	1,57,792 5 2	1,50,780 12 4

The total number of documents registered in this Division during the year was 249,404, against 283,956 of the previous year, showing a decrease of 34,552 documents. The total receipts and expenditure fell off from Rs. 2,49,490-11 and Rs. 1,57,792-5-2 in 1897-98 to Rs. 2,30,885-13 and Rs. 1,50,780-12-4, respectively, in the year under report. This decrease in the number of documents registered, and consequently in receipts and expenditure, is shared by all the districts of this Division excepting Nadia, where there was a slight increase under head expenditure. In 1896-97 and 1897-98 scarcity prevailed more or less in all the districts of this Division, and the people mortgaged or sold their property for a living. The circumstances of these years were exceptional, and consequently the figures showing the particulars of registration for those years were abnormal, as will appear from the table given below :—

		Number of documents registered.	Receipts.	Expenditure.
1		2	3	4
			Rs. A. P.	Rs. A. P.
1895-96	...	223,819	2,08,886 0 0	1,86,695 0 0
1896-97	...	260,217	2,34,382 0 0	1,47,840 0 0
1897-98	...	283,956	2,49,490 11 0	1,57,792 5 2
1898-99	...	249,404	2,30,885 13 0	1,50,780 12 4

The figures for the year under report when compared with those for 1895-96 show an improvement, both in the number of documents registered as well as in receipts and expenditure, but that appears to be due more to the general progress of the times than to any particular cause.

As remarked above, there was a decrease in the total number of documents registered and in receipts and expenditure. This decrease (excepting in Murshidabad, for which figures have not been furnished) occurred generally under all the heads of registration in all the districts, excepting a few noticed later on.

There was a noticeable increase in the number of perpetual leases in the 24-Parganas and Nadia; under head "Instruments of sale, etc., of moveable property of value less than Rs. 100" in Jessore and under head "Other leases" in Nadia. The increase in the number of perpetual leases in the 24-Parganas is reported to be due to settlements and resettlements in the Sundarbans; that in the number of perpetual and other leases in Nadia, to the extension of the system of subinfeudation, to settlements made by certain landlords, to renewal of several term leases, and to the better prospects of the crops which induced the peasantry to enter into new settlements. The increase of 1,342 instruments under head "Sale of immoveable property of value less than Rs. 100" in Jessore is explained by the Collector to be due to the good harvest of the year, which induced the raiyats to sell their holdings to get ready money for spending on marriage and other ceremonies.

XVII.—CONDITION OF THE DIVISION AS REGARDS LAND AND LAND REVENUE ADMINISTRATION.

63. The number of estates of each class borne on the revenue-roll of the several districts during the years 1897-98 and 1898-99 is shown below:—

YEAR.	Class I— Permanently- settled estates.	Class II— Temporarily- settled estates.	Class III— Estates held direct by Government.	Total.
1	2	3	4	5
1897-98 ...	9,394	731	252	10,377
1898-99 ...	9,398	726	255	10,379
Difference ...	+4	—5	+3	+2

64. There was no change in the total number of estates in any of the districts of this Division except the 24-Parganas, where two new estates were formed by partition. Transfers from one class to another took place in every district in consequence of the sale of permanently-settled estates for arrears of revenue and their purchase by Government for want of bidders, as also on account of settlement of khas mahals for definite periods and of sales of petty Government estates to private individuals with revenue fixed in perpetuity. The changes in Nadia were due also to the transfer of one estate to the district of Pabna and to the addition to the roll as a new estate, of one missing estate which had been removed from it.

65. The following table shows the demand, collections, remissions and balances of land revenue during the past two years, 1897-98 and 1898-99:—

YEAR.	Arrear demand.	Current demand.	Total demand.	Arrear collections.	Current collections.	Total collections.	Remissions.	Balance.	Percentage of collections on demand (col. 7 on col. 4.)
1	2	3	4	5	6	7	8	9	10
1897-98 ...	Rs. 1,71,825	Rs. 51,29,779	Rs. 53,01,604	Rs. 1,42,203	Rs. 49,67,529	Rs. 51,09,732	Rs. 6,712	Rs. 1,85,160	96.3
1898-99 ...	1,92,024	51,49,209	53,41,233	1,65,558	50,26,502	51,93,060	4,265	1,43,908	97.2

Compared with the figures of the preceding year, the demands, collections and the percentage of collections on demand show an increase. The remissions and balances, however, fell from Rs. 6,712 and Rs. 1,85,160 to Rs. 4,265

and Rs. 1,43,908, respectively, the result as a whole testifying to the punctuality with which the land revenue is collected in the Division. The percentage of collections in each class is exhibited in the following statement:—

CLASS OF ESTATES.	1897-98.						1898-99.					
	Arrear demand.	Arrear collection.	Percentage of collection (col. 3 on col. 2).	Current demand.	Current collection.	Percentage of collection (col. 6 on col. 5).	Arrear demand.	Arrear collection.	Percentage of collection (col. 9 on col. 8).	Current demand.	Current collection.	Percentage of collection (col. 12 on col. 11).
1	2	3	4	5	6	7	8	9	10	11	12	13
I.—Permanently-settled estates.	Rs. 38,096	Rs. 37,390	98'15	Rs. 44,42,414	Rs. 43,53,893	98'67	Rs. 59,641	Rs. 58,304	97'7	Rs. 44,42,643	Rs. 44,02,894	99'1
II.—Temporarily-settled estates.	48,551	44,050	90'78	3,31,480	3,05,950	92'57	40,084	46,954	94'6	3,36,018	3,05,708	90'7
III.—Estates held direct by Government.	85,176	80,758	71'23	3,55,935	2,96,966	83'43	82,759	61,800	74'07	3,60,686	3,17,980	88'06
Total ...	1,71,823	1,62,203	94'76	51,29,779	49,57,809	96'90	1,82,484	1,60,958	88'7	51,40,800	50,26,582	97'6

Except in the case of class I estates, where there was a slight fall, the percentage of collections of arrear demands improved in the other two classes (II and III), though it was below the prescribed standard of cent per cent. The results in Nadia, Jessore and Khulna, where the percentage was above 95, may be accepted as fair. The collections were not satisfactory in the 24-Parganas or in Murshidabad. The current collections improved in all the three classes of estates. The percentage of total collections, *i.e.*, both arrear and current, is as follows:—

Calcutta	...	...	...	...	99'90
24-Parganas	...	...	...	...	95'40
Nadia	...	...	...	...	99'28
Murshidabad	...	...	...	...	98'59
Jessore	...	...	...	...	97'67
Khulna	...	...	...	...	96'19
Total	...	...	...	...	97'20

66. The statement below shows the collections in estates under direct management in each district of the Division:—

DISTRICT.	Number of estates.	Current demand.	Arrear demand.	Total demand.	Current collection.	Arrear collection.	Total collection.	PERCENTAGE OF—			
								Current collection on current demand.	Arrear collection on arrear demand.	Total collections on total demand.	Current collection on current demand in 1897-98.
1	2	3	4	5	6	7	8	9	10	11	12
Calcutta	1	Rs. 14,597	Rs. 21	Rs. 14,603	Rs. 18,375	Rs. 15	Rs. 18,390	97'83	71'42	90'9	98'88
24-Parganas	34	2,82,872	47,939	3,30,811	2,40,004	22,001	2,72,005	85'24	66'75	82'55	80'77
Nadia	34	21,441	4,295	25,736	20,377	3,780	24,157	95'08	87'54	93'78	76'94
Murshidabad	74	27,032	24,046	51,078	19,200	19,502	38,702	70'87	81'1	75'74	51'03
Jessore	82	4,313	1,831	6,144	4,071	1,423	5,494	94'38	78'08	86'55	60'60
Khulna	30	16,053	4,637	20,690	15,213	4,000	19,213	94'50	90'30	95'62	72'44
Total	255	3,30,648	82,759	4,13,407	3,17,930	61,300	3,79,230	88'05	74'07	83'5	...
Total for 1897-98	252	3,55,935	85,176	4,41,111	3,96,966	60,758	4,57,724	83'43	71'3	81'1	83'43

The number of estates under direct management was 255, against 252 in the preceding year. There was no change in Calcutta, the 24-Parganas, or in Khulna. The number increased in Nadia from 32 to 34, and in Murshidabad, from 72 to 74, while in Jessore it decreased from 83 to 82. The increase in Nadia is due to the transfer of four temporarily-settled estates to this class on the expiry of their settlements and to the transfer of two estates to class II on re-settlement. The increase in Murshidabad is due to the cancelment of leases of two resumed estates under class II for repeated default and their transfer to

class III. The decrease in Jessore is ascribed to the fact that one estate, the property of Government, was under the orders of the Board of Revenue struck off the roll in consequence of its lands having merged into an estate lost by Government in a civil suit. The result of the year, so far as the divisional totals are concerned, was a decided improvement over that of the preceding year, there being an appreciable increase under all the heads. In the districts of the 24-Parganas, Nadia and Murshidabad, there was an increase in the current demand, while in the remaining districts there was a decrease. The increase is ascribed chiefly to resettlement of certain estates in the 24-Parganas, to *utbandi* settlements in Nadia, and to transfer of two estates to class III in Murshidabad. The decrease in Calcutta is as usual due to the redemption of land tax. In Jessore it was the result of transfer and retransfer of estates from one class to another. In Khulna the fluctuation is too insignificant to call for notice. Compared with the preceding year, the percentage of current collections on current demand improved in all the districts of this Division except Calcutta and the 24-Parganas. The increase was due chiefly to a better harvest. In Murshidabad, it was due partly to the entertainment of salaried tahsildars and *halsannahs*. The decrease in Calcutta was too slight to call for notice. In the 24-Parganas it was due to the partial failure of the crops in portions of the Diamond Harbour subdivision and Port Canning, and also to the bad system of collection of khas mahal rents by tahsildars paid by commission, which has since been replaced by salaried ones. Except in the 24-Parganas and Jessore, where there was a slight fall, the arrear collections improved decidedly in all the other districts, although the prescribed standard of cent per cent was nowhere attained, the bad state of collections being attributed chiefly to accumulation of heavy arrears in the beginning of the year due to successive failure of crops in preceding years.

67. The remissions granted during the year are classified below :—

		1897-98.	1898-99.
		Rs.	Rs.
Nominal remissions	...	3,984	341
Remissions of grace	...	2,495	3,023
Ditto of right	...	233	901
Total	...	6,712	4,265

Compared with the preceding year, there was a decrease in the remissions, due to decrease in the 24-Parganas, Nadia and Khulna, in spite of an increase of over Rs. 1,000 in Murshidabad. The nominal remissions represent fictitious demands of some estates bought in by Government for want of bidders, as also the arrear demand of a Government estate in the district of Khulna, sold to a private individual. The largest remissions of grace were granted to tenants of some of the Government estates, in the districts of the 24 Parganas and Murshidabad, owing to failure of crops and scantiness of water in a jhil, a small portion representing a remission of grace granted to the auction purchasers of thatching grass in the khas mahals of the Meherpore subdivision, in the district of Nadia, on account of loss by fire. The remissions of right were granted on account of acquisition of lands for public purposes, and irrecoverable rents of estates washed away by fluvial action. Except in the 24-Parganas and Murshidabad, there has been no material change during the year, either in the agency or in the mode of management of estates under direct management. In the 24-Parganas, a regular establishment of six tahsildars and six peons was sanctioned by the Board to replace the collecting *gumashtas* on commission system employed in the Government estates in the Diamond Harbour subdivision. The Board's sanction having been received at the end of December 1898, when the collections had commenced, the old establishment was allowed to continue till the end of the collection season in March last, after which the new establishment was entertained. In Murshidabad the system of collection by tahsildars, paid by commission, having proved a failure, a salaried establishment of tahsildars and *halsannahs* was entertained from the 1st August 1898. The paid system is reported to have proved a change for the better.

68. The statement below shows the allotment made and the expenditure incurred for the management of, and improvements in, khas mahals and those on education:—

Division.	District.	AMOUNT ALLOTTED FROM—				EXPENDITURE ON—				EDUCATION.	
		7½ per cent.		Two per cent. for sanitary improvements.	Total.	Management proper, including contingencies.	Miscellaneous and agricultural improvements, &c.	Sanitary improvements.	Total.	Grant.	Expenditure.
		Management proper, including contingencies.	Miscellaneous and agricultural improvements, &c.								
1	2	3	4	5	6	7	8	9	10	11	12
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
24-Parganas—	District	14,590	4,859	11,019	30,468	14,416	4,632	11,019	30,067	3,535	3,535
	Orphananj market	16,942	29,963	....	46,905	16,413	28,833	....	45,246	....	....
	Total	31,532	34,822	11,019	77,363	30,828	33,465	11,019	75,312	3,535	3,535
	Nadia	2,096	370	....	2,466	1,814	370	....	2,184	418	418
	Murshidabad	1,890	1,078	42	3,010	1,809	428	42	2,279	413	413
	Jessore	3	391	700	1,094	....	391	700	1,091	....	....
	Khulna	787	1,097	....	1,884	695	1,097	....	1,892	1,140	1,140
	GRAND TOTAL	36,268	38,358	11,761	86,387	35,045	35,751	11,761	82,558	5,512	5,512

69 A sum of Rs. 77,363 was allotted for the management of, and miscellaneous and sanitary improvements in, the Government estates, in the district of the 24-Parganas, of which the sum of Rs. 46,905 was sanctioned for the Orphananj market. The allotment for miscellaneous and agricultural improvements amounted to Rs. 34,822, of which a sum of Rs. 29,963 was for the Orphananj Market, and the remainder Rs. 4,859 was for the other Government estates in the district. The amount spent on miscellaneous and agricultural improvements was Rs. 33,465, of which Rs. 28,833 were spent in the Orphananj market in the construction of new godowns, and in the repairs of existing buildings, sheds, &c., and the remainder (Rs. 4,632) was expended in repairing tahsil cutcherries, embankments and sluices, and constructing culverts in some Government estates. The unexpended balance was Rs. 1,357, which could not be utilised within the year, as the works for which the amount was sanctioned could not be completed within that period. The entire amount of Rs. 11,019, allotted for sanitary improvements, was utilized during the year and spent in filling up certain unhealthy tanks in the Government estate Panchannogram, and in raising the sites of certain other filled-up tanks and in constructing latrines.

In Nadia the whole of Rs. 370 allotted for miscellaneous improvements was spent in erecting sheds and repairing cutcherry houses in some Government estates. In Murshidabad a sum of Rs. 1,720 was allotted for miscellaneous and sanitary improvements, out of which Rs. 470 only were spent, and the balance (Rs. 1,250) lapsed to Government. This amount was sanctioned for the re-excavation of a tank and of a ditch in the Government estate, Gar Berhampore. The tank was rendered unnecessary by the placing of a hydrant of the Berhampore Water-Works near the tank. The early and excessive rains of the year under report, which kept the ditch almost full of water throughout the year stood in the way of re-excavation of the other. In Jessore the whole of the allotment of Rs. 1,091 made for miscellaneous and sanitary improvements was spent during the year in constructing and repairing certain cutcherry houses, raising the old Collectorate compound, re-excavating a tank at char Chatian, and in improving the drainage of the Narail subdivisional cutcherry compound.

In Khulna the allotment sanctioned for works of miscellaneous and agricultural improvements was Rs. 1,097. In addition to this a sum of Rs. 1,300 was contributed by the khas mahal tenants of Chandkhali, Muhammadabad, etc., towards the construction of a substantial bridge over a khal in the estate. This amount, together with the whole of the Government grant, was spent during the year on miscellaneous and agricultural improvements. Besides the above a sum of Rs. 1,458 was spent on roads in Government estates by the District Boards of this Division, of which Rs. 1,200 were spent by the

District Board of the 24-Parganas, Rs. 117 by the District Board of Nadia, and Rs. 141 by the District Board of Murshidabad. No new staples were introduced, and no new agricultural implements were brought into use or improvements made in agricultural machinery during the year under report. In Jessore an experimental cultivation of sugarcane was tried in khas mahal char Barni in the Magura subdivision; but as the planting was done only a few days before the close of the year, the result is not known. In the 24-Parganas Rs. 3,535 were spent in the maintenance of 81 schools in Government estates. In Nadia 9 schools with 281 pupils were maintained by Government in khas mahals at a cost of Rs. 418. In Murshidabad 8 primary schools with 276 pupils were maintained in the Government estates at a cost of Rs. 413. In Jessore no grant towards education in khas mahals is given by Government, none being necessary, as the estates are generally scattered plots in villages where schools and pathshalas maintained by the District Board are in existence. In Khulna 23 schools with 820 pupils were maintained in the Government estates at a cost of Rs. 2,476, out of which Rs. 1,146 were contributed by Government. The condition of the raiyats of the Government estates in this Division was generally good during the year. The year's harvest was plentiful almost everywhere except in certain estates in Murshidabad, where the crops were partly damaged by floods. The registers and accounts of the several Government estates in this Division were duly examined by the inspecting officers. No material irregularities or discrepancies were brought to notice in any of the districts of this Division except in the 24-Parganas. The system of accounts of the Government estate Panchannogram in the 24-Parganas has been found to be defective. The raiyats' ledger is kept in an old and obsolete form. This was brought to the notice of the Board, who have directed the re-writing of the ledger in the Board's form No. II. It is now being re-written in this form. The improvement of the system of accounts is under consideration. In Murshidabad a tahsildar was dismissed during the year for misconduct, he being suspected of taking *salami* in making settlements with raiyats. No complaints were received against any other tahsildar or subordinate. Out of 1,216 estates or shares of estates with land revenue amounting to Rs. 2,54,052 which became liable to sale, only 86, or 7.14 per cent., were actually sold, against 7.5 per cent. of the preceding year and 8.2 per cent. of the year 1896-97. The sale law was worked with leniency in all the districts of this Division, and defaulting proprietors were allowed every facility for paying their dues and saving their estates or shares from sale. The law was, however, strictly followed in respect of habitual defaulters and their estates or shares were sold on the dates fixed for their sale.

* * * * *

71. In submitting the Report on the Administration of Land Revenue from the Commissioner in the Sundarbans for the year 1897-98, and subsequently in a separate letter, dated the 11th October 1898, I brought to the notice of the Board of Revenue that in the Khulna Sundarbans, the settlement-holders were in the habit of creating *gantidari* tenures with titles of *Asat* talukdars, that the latter in turn created *Nimasat* talukdars, and so forth, until there were four or five tenures between the settlement-holder and the cultivating raiyat, the result being that the last intermediate tenure-holder exacted as much as Rs. 4 to Rs. 8 for a bigha of land for which the settlement-holder paid four annas to Government. I further reported that there was no security of the tenants' rights, and that there was risk of extortion being practised upon the cultivating raiyats under the above system, and I gave it as my opinion that the evil would remain unchecked until all the Sundarbans mahals were surveyed and settled under the Bengal Tenancy Act. The Board of Revenue were at first under the impression that these middlemen exercised important functions towards the reclamation of the lands and contributed to the welfare of the cultivators, and therefore they did not find anything wrong or reprehensible in the system. They observed that the time for Government to reap the profits and to settle the estates would be when the present leases expired. I, however, pointed out that most of these middlemen were interlopers; that they had nothing to do with reclamation; that they came upon the scene when the

raiylats had cleared the land with great labour and trouble, and demanded any rate of rent they chose. It was further pointed out to the Board of Revenue that the oldest of the settlements under the Waste Lands Rules would not lapse earlier than the year 1919, and that the earliest date on which any of the leases other than those granted under the Waste Lands Rules would expire, was 1903-4. Considering the length of time that must elapse before the term of the current settlements would expire, I supported the suggestion made by Mr. Ross that survey and settlement operations under the Bengal Tenancy Act should be carried on in any case in which it was found that subinfeudation by the introduction of middlemen was giving rise to disputes, looting of crops, riots, etc. The Board of Revenue have now recognised that the system is bad, and have accepted the suggestion that the only remedy in specific cases is recourse to the provisions of Chapter X of the Bengal Tenancy Act. They have likewise agreed to consider any case that may be reported to them, in which action under Chapter X of the Tenancy Act is desirable.

74. *Road and Public Works Cess.*—The subjoined table shows the collections of road and Public Works cesses during the year:—

DISTRICT.	DEMANDS.			COLLECTIONS.				BALANCES.			Deduct remissions.	Net arrear.	Percentage of net balance on gross demand.
	Current.	Arrear.	Total.	Current, including previously paid in advance.	Arrear.	Advance for future years.	Total.	Current.	Arrear.	Total.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Parganas—													
Road cess ...	1,18,808	73,005	1,41,063	99,749	20,389	5,101	1,25,239	10,119	2,708	12,827	4	21,921	15.3
Public Works cess ...	1,18,808	23,005	1,41,813	99,749	20,389	5,101	1,25,239	10,119	2,708	12,827	4	21,921	15.3
Total ...	2,37,796	46,190	2,83,986	1,99,498	40,777	10,202	2,50,477	20,238	5,416	25,654	8	43,842	15.3
Murshidabad—													
Road cess ...	77,514	12,197	89,711	72,554	12,084	2,905	87,533	4,900	112	5,012	26	5,047	5.6
Public Works cess ...	77,514	12,197	89,711	72,554	12,084	2,905	87,533	4,900	112	5,012	26	5,047	5.6
Total ...	1,55,028	24,394	1,79,422	1,45,107	24,168	5,810	1,75,985	9,802	225	10,027	52	10,054	5.6
Murshidabad—													
Road cess ...	72,385	12,790	85,175	66,072	7,768	4,175	78,015	6,323	5,028	11,351	14	11,337	13.3
Public Works cess ...	72,385	12,790	85,175	66,072	7,768	4,175	78,015	6,323	5,028	11,351	14	11,337	13.3
Total ...	1,44,770	25,581	1,70,351	1,32,144	15,536	8,350	1,55,030	12,646	10,056	22,702	27	22,775	13.3
Murshidabad—													
Road cess ...	1,01,221	18,768	1,20,014	82,613	17,008	2,793	1,04,314	18,639	865	19,404	.....	19,404	16.3
Public Works cess ...	1,01,221	18,768	1,20,014	82,613	17,008	2,793	1,04,314	18,639	865	19,404	.....	19,404	16.3
Total ...	2,02,442	37,536	2,40,028	1,65,226	34,016	5,586	2,09,828	37,278	1,700	38,978	.....	38,978	16.3
Murshidabad—													
Road cess ...	80,561	9,758	90,319	72,112	9,005	2,067	83,184	8,446	753	9,199	40	9,153	11.13
Public Works cess ...	80,561	9,758	90,319	72,112	9,005	2,067	83,184	8,446	753	9,199	40	9,153	11.13
Total ...	1,61,122	19,517	1,80,639	1,44,224	18,010	4,134	1,67,368	16,892	1,507	18,404	80	18,306	11.13
Grand Total for the Division.	4,50,589	76,603	5,27,192	3,93,000	67,148	12,751	4,78,900	57,490	9,453	66,943	92	66,851	12.6
Grand Total for the Division.	4,50,589	76,603	5,27,192	3,93,000	67,148	12,751	4,78,900	57,490	9,453	66,943	92	66,851	12.6
Grand Total for the Division.	9,01,179	1,53,207	10,54,386	7,86,199	1,34,297	27,482	9,57,980	1,14,980	18,910	1,33,890	180	1,33,710	12.6

75. There has been a decrease in the demand of cesses as compared with that of the preceding year. The decrease is shared by the districts of Jessore and Khulna, while the 24-Parganas, Nadia and Murshidabad show a slight increase. The decrease in Jessore is due to correction of certain mistakes made in the Revaluation Department. The decrease in Khulna is nominal, inasmuch as the demand due from estate No. 780, amounting to Rs. 1,490, of which abatement was afterwards sanctioned, was included in the current demand of the previous year. The collections, both arrear and current, improved in Nadia and Khulna, while in the 24-Parganas and Jessore the current collections fell off, but those of arrears improved, and in Murshidabad the current collections improved, but those of arrears fell off. The result is, on the whole, satisfactory, 90.6 per cent. of the total demand having been collected during the year, against 88.1 per cent. in the preceding year. General revaluation is in progress in the

24-Parganas. Partial revaluations took place in Nadia, Murshidabad and Khulna during the year. It has been proposed to make a general revaluation of the latter district. The proposal is now under the consideration of the Board of Revenue.

XVIII.—ATTACHED ESTATES, INCLUDING THOSE MANAGED BY THE COURT OF WARDS.

76. The number of estates under the management of the Court of Wards was four (as noted below), against five in the preceding year, the Kasimbazar estate in Murshidabad having been released in September 1897 :—

District.		Ward's estate.		Trust estate.
24-Parganas ...	...	Bhawanipur ...	...	...
Jessore ...	...	Sridharpur ...	...	...
Khulna ...	...	Satkhira ...	...	Syudpar.

In addition to the above the Chanchra road estate in Jessore, referred to in paragraph 54 of the previous year's report, continued to be managed during the year by the Collector of the district.

77. The Bhawanipur estate in the 24-Parganas, which was the most important estate in the Division, was released on the 16th February 1899. The ward attained his majority in August 1898; but, at his own request, the Government of Bengal was pleased to direct the Court of Wards to retain charge of his estate for a further period of two years. In November 1898, however, the ward applied for the release of his estate, and accordingly it was made over to him on the aforesaid date, after management by the Court for a period of twelve years and some months. The gross rental at the date of assumption of charge was Rs. 1,44,584, while at the date of release it was Rs. 1,57,110, showing an increase of Rs. 12,726, which was chiefly due to the reclamation of Sundarbans jungle lands and to settlement and re-settlement of raiyati holdings, etc. The total demand of the estate during the period under report was Rs. 2,66,328, inclusive of an arrear demand of Rs. 1,29,116, of which Rs. 1,11,741, or 81·4 per cent. of the current demand, and 41·9 per cent. of the total demand, were realised, against 111·2 per cent. and 56·9 per cent., respectively, in the previous year. The amount written off under proper sanction, as bad and irrecoverable, was Rs. 6,003, leaving a balance of Rs. 1,48,584, against Rs. 1,25,453 in the previous year. The decrease in the percentage of collections is due to the fact that the estate was released at the commencement of the best collection season. Rupees 2,147 were spent on the construction and repair of buildings and Rs. 10,049 on excavation and re-excavation of tanks, construction and repair of village roads, bridges and culverts, raising and repairing embankments, and damming and deepening khals. The total outlay (Rs. 12,196) on works of improvement was less than that in the previous year, because the estate passed out of the hands of the Court at a time when such works are carried out. The amount spent under this head during the entire period of management was Rs. 1,90,916, of which Rs. 47,529 represent the expenditure on construction and repairs of houses and the balance on the reclamation of about 15,000 bighas of jungle lands, maintenance of embankments, dams and hâts, excavation and re-excavation of 22 tanks, construction and repairs of four bridges and a large number of village roads, deepening three khals, and introducing the cultivation of potato in the Sundarbans portion of the estate. The expenditure on schools and dispensaries during the period under report was Rs. 500 and Rs. 693, respectively, against Rs. 601 and Rs. 823 in the previous year. The total outlay under these heads during the whole period of management amounted to Rs. 2,905 and Rs. 5,069, respectively. The estate maintained 15 schools and pathsalas and five dispensaries, two of which were established during the period of the Court's management. The health and general condition of the raiyats were good during the year under report. The condition of the tenants of the Jamira circle, who suffered badly from the scarcity of 1896-97, is reported to be improving, and it is expected that another year's good crop will enable them to recover their former position. The financial results of the Courts' management appear, on the whole, to be satisfactory. After paying off liabilities to the extent of Rs. 46,151 due at the commencement of the Courts'

management and providing for the expenses of the marriage of the ward, the *sradh* of his grandmother, and of the *annaprasun* ceremonies of the son and daughter of the ward, amounting to Rs. 35,000 in all, Rs. 1,78,694 were invested in Government promissory notes and lands, Rs. 7,215 were paid to the ward on the release of the estate, and there was a cash balance of Rs. 4,121 to the credit of the estate in the Treasury on the 31st March 1899. The ward enjoyed good health during the year. He continued his studies with his tutor, and is said to have made fair progress in English. Also he received a course of training in zamindari management. At first the management of the estate was not very successful, but since the appointment of the present manager, Babu Durga Das Bose, it has gradually improved. He is an experienced and careful officer, and managed the estate with great energy and efficiency.

78. The total demand of the Sridharpur estate in Jessore was Rs. 8,69,769, of which Rs. 7,57,827 represent the arrear balances due at the commencement of the year. The increase in the arrear demand is due to the fact that a large amount of arrears was first ascertained during the year from papers obtained from certain dismissed and absconding naibs, after taking legal steps against them. Rupees 86,956, or 77·6 per cent. of the current demand, were realised during the year, against 82·8 per cent. in the previous year, and Rs. 2,56,304 were remitted, under proper sanction, leaving a balance of Rs. 5,32,626 outstanding at its close.

XIX.—EXCISE.

80. The following statement shows the excise revenue realized in the Division during the years 1897-98 and 1898-99 :—

District.	Number of Licenses.		Increase.	Decrease.	Revenue.		Increase.	Decrease.
	1897-98.	1898-99.			1897-98.	1898-99.		
1	2	3	4	5	6	7	8	9
24-Parganas	1,000	1,207	207	...	Rs. 5,01,478	5,32,941	28,803	...
Calcutta	793	823	31	...	25,49,521	29,15,350	69,029	...
Nadia	239	248	9	...	1,21,448	1,28,247	3,719	...
Murshidabad	304	370	66	...	1,40,997	1,60,125	9,428	...
Jessore	281	286	5	25	64,136	62,341	7,705	...
Khulna	185	181	...	1	73,027	63,041	10,014	...
Total	2,771	3,118	346	26	37,70,707	39,02,545	1,25,838	...
	Net increase ...		342		Net increase ...		1,25,838	

There was a net increase of 342 licenses, with a corresponding increase in the revenue, amounting to Rs. 1,25,838, due to increased consumption of excisable articles and favourable settlement of shops, indicating that the country has recovered from the effects of the famine of the preceding year, in which the revenue declined to the extent of Rs. 1,01,668.

81. The table below shows the revenue derived from each excisable article during the past two years :—

Excisable Articles.	Number of Licenses.		Increase.	Decrease.	Revenue.		Increase.	Decrease.
	1897-98.	1898-99.			1897-98.	1898-99.		
1	2	3	4	5	6	7	8	9
1. Country spirits	371	369	...	2	Rs. 16,83,641	19,02,438	2,18,394	...
2. Rum, imported spirits, &c. ...	323	310	...	4	6,07,106	4,75,413	...	91,093
3. Tari	630	863	233	...	1,72,048	1,66,130	...	7,518
4. Pachwal	363	366	3	...	23,258	26,570	3,321	...
5. Charas, <i>majum</i> and <i>chandu</i>	19	19	...	...	17,490	18,594	1,405	...
6. Ganja and <i>siddhi</i>	444	443	...	1	5,40,073	5,48,204	...	869
7. Opium	891	625	...	26	7,60,896	7,63,237	2,341	...
8. Spirits used for arts ... ..	...	49	...	49	136	320	184	...
9. Miscellaneous ... ..	...	...	...	...	2,070	1,333	...	1,177
Total	2,771	3,118	340	7	37,70,707	39,02,545	2,27,053	1,01,217
	Net increase ...		342		Net increase ...		1,25,838	

There was an improvement in the revenue from country spirits in every district of the Division, owing to increased consumption. The better condition of the people on account of good harvest and better supervision against illicit production brought about this result.

83. *Salt*.—There was no change in the protected area in the two saliferous districts in the Division, viz., the 24-Parganas and Khulna, nor was there any incident requiring special notice.

The table below compares the consumption of salt in the two districts during the past two years:—

DISTRICT.	1897-98.	1898-99.	Increase.	Decrease.	REMARKS.
1	2	3	4	5	6
	Mds.	Mds.	Mds.		
24-Parganas ...	1,51,468	1,78,092	26,624	...	
Khulna ...	1,12,908	1,24,807	11,899	...	
Total ...	2,64,376	3,02,899	38,523	...	

There was an increase in the quantity of salt sold in both the districts. The Collector of the 24-Parganas reports that the increase was mostly contributed by certain thanas of the Sadar and Diamond Harbour subdivisions, where the salt preventive staff did good work by keeping an efficient check upon illicit manufacture, and that it was also partly due to the successful vigilance kept over the local illicit manufacture of salt, and partly to the improved condition of the people owing to a good harvest. The increase in Khulna is reported to be due to good harvests, and to careful vigilance on the part of the police.

84. The table below shows the quantity of salt confiscated and the fines and forfeitures realized, and the rewards granted in each of the two districts:—

DISTRICT.	Quantity of salt confiscated—		Fines and forfeitures realized—		Rewards paid—		REMARKS.
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	
1	2	3	4	5	6	7	8
	Mds. s. c.	Mds. s. c.	Rs.	Rs.	Rs.	Rs.	
24-Parganas ...	31 32 13	167 0 8½	888	3,949	464	750	
Khulna ...	5 20 1	5 32 10	133	82	101	25	
Total ...	37 12 14	172 33 2½	1,021	4,031	565	775	

There was a large increase in the quantity of salt confiscated in the 24-Parganas, attributable to the detection of a large number of cases by the salt revenue officers. The variation in the quantity of salt confiscated in Khulna is slight. It is reported that the rewards in the cases brought up by the salt revenue officers will be adjusted by the Assistant Commissioner of Salt Revenue, and have not been paid from the district of the 24-Parganas. In Khulna Rs. 25 were disbursed to informers, &c., as rewards, against Rs. 101 paid in the preceding year. The falling off is explained by the fact that no reward was granted for detection of cases of illicit manufacture of salt, as no such case occurred during the year.

85. The number of cases instituted for offences against the salt laws is shown below :—

		1897-98.	1898-99.
24-Parganas	...	178	329
Khulna	...	15	20
		<u>193</u>	<u>349</u>

The institutions increased in both the districts. The salt revenue officers were given powers to arrest offenders in the year under report, hence the increase in the 24-Parganas. The increase in Khulna is the result of careful vigilance of the police. The rowana system is reported to work satisfactorily in both the districts.

XX.—STAMPS.

86. The following table shows the statistics of the stamp revenue in this Division during the year under report, as compared with those of the preceding year :—

YEAR.	RECEIPTS.				CHARGES.			REMARKS.
	Sale of Court-fee stamps, stamps, for copies &c.	Sale of non-judicial stamps.	Miscellaneous receipts.	Total.	Refunds.	Other charges.	Total.	
1	2	3	4	5	6	7	8	9
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1897-98	30,45,345	18,50,147	52,771	49,61,263	83,415	73,431	1,55,846	
1898-99	30,44,169	16,94,353	30,681	47,69,103	81,354	49,839	1,31,193	
Increase	1,012	1,55,794	22,090	2,92,160	2,061	23,602	24,663	
Decrease								

The sales of stamps in each district are shown below :—

	1897-98.	1898-99.
	Rs.	Rs.
Calcutta	27,16,726	24,32,010
24-Parganas	7,53,123	7,61,577
Nadia	3,46,887	3,64,925
Murshidabad	3,04,844	2,77,256
Jessore	4,35,754	4,50,353
Khulna	3,44,158	3,56,301
Total	<u>49,01,492</u>	<u>46,42,422</u>

There was an increase in the revenue from Court-fee stamps in every district except Calcutta and Murshidabad. The increase is due to the institution of a larger number of civil suits of high value, owing to the good harvests of the year. Also, in the period following the famine, people had recourse to Civil Courts for the realization of their money : hence the increase in civil litigation. The decrease in Calcutta is due to a falling off in the amount of Probate and Administration duty, also to the fact that the sales were affected by the exodus in 1898-99 in consequence of the plague scare. The decline in Murshidabad may be attributed to the fact that in the preceding year some stamps of high value were sold for the institution of civil suits for large sums. The sale of non-judicial stamps decreased in all districts. In consequence of the good harvests of the year under report the people had less necessity to borrow money on deeds, mortgages, etc. The Collector of Calcutta reports that owing to the famine and plague scare, the business in Calcutta in all its branches suffered considerably with the result that the sales of these stamps were affected.

XXI.—INCOME-TAX.

88. The following table shows the demand, collection and balance of income-tax in the several districts of this Division, including Calcutta, during the year 1898-99 :—

District.	Gross demand.	Remission.	Net demand.	Collection.	Balance.	Collection in the year 1897-98.	DIFFERENCE BETWEEN COLUMNS 6 AND 7.				REMARKS.
							Increase.	Decrease.	Percentage of increase.	Percentage of decrease.	
1	2	3	4	5	6	7	8	9	10	11	12
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.			
24-Parganas ...	78,922	1,964	76,958	74,606	2,352	74,442	254	...	...	...	...
Calcutta ...	23,53,990	60,875	22,93,115	21,91,940	91,175	21,32,938	60,011	...	3.3	...	...
Nadia ...	61,536	1,070	60,466	60,466	...	57,304	3,162	...	5.3	...	...
Murshidabad ...	63,846	2,748	61,098	60,110	...	63,017	2,988	...	4.9	...	...
Jessore ...	46,919	1,070	45,849	41,396	4,453	44,759	1,090	...	2.4	...	1.3
Khulna ...	38,182	869	37,313	36,140	1,173	35,485	1,828	...	5.2	...	...
Total ...	24,62,785	74,106	23,88,679	23,72,742	1,15,937	23,57,045	77,615	...	3.4	...	...

98. The average incidence of the tax, excluding Calcutta, was one rupee to 27 persons as compared with 28 persons in the preceding year. In Calcutta the incidence was one rupee to every 4 persons or the same as in the previous year. The tax continues to be as unpopular as ever. But the people, aware of the impossibility of getting any relief, are becoming more and more accustomed to it, and there was no open indication of discontent.

XXIII.—RAILWAYS AND OTHER PUBLIC WORKS.

98. *Railways.*—In the 24-Parganas, 109.6 miles of the Eastern Bengal State Railway and 32 miles of the Bengal Central Railway were open for traffic during the year. The proposal to construct a light feeder railway from Chandipur to Taki *via* Basirhat was considered by Messrs. Barry and Company, and they now contemplate the construction of a broad gauge line. The alignment is to pass from Chandipur *via* Daskinhhat, Changdana, Itadipur, Joypur, Soladanga and other villages to Taki. The Ranaghat-Krishnagar light railway in Nadia was opened on the 4th April 1899. The Azimganj-Nalhati branch of the East Indian Railway is the only line open in the district of Murshidabad. The extension of the riverside sidings of this line has been completed. Survey is now being made for the construction of a new line named the Ranaghat-Ganges-Katihar Railway, which is to pass through Nadia and Murshidabad. No new railways were constructed in Jessore or Khulna. As reported last year, a survey for a line from Kishanganj to Magura *via* Kotchandpur was made, and another survey was completed during the year from Bongaon to Chandpur, but nothing (apart from correspondence) has since been done to carry out either project.

99. *Embankments, drainages, sluices, &c.*—In the 24-Parganas, a sum of Rs. 26,430 was spent in maintaining 216½ miles of schedule D embankments against Rs. 18,914 in the previous year. There are 71 drainage and irrigation sluices, of which 48 are maintained by Government, 4 by the Calcutta Corporation, and 19 by the zamindars. Two retired lines of embankment have been sanctioned during the year under report, *viz.*, one at Jahanabad and the other at Doorbaberia. Two single vented irrigation sluices, one at Ahmedpur and the other on the Kawratolla khal were taken in hand during the year. Nine cuts were allowed in embankments for drainage and eight for irrigation. Besides these, three cuts were made surreptitiously. In Murshidabad the Bhagirathi embankment was maintained in proper order. A sum of Rs 62,883 was expended towards the construction of a retired line of embankment at Bhagwangola. The work was commenced in 1897-98, and is expected to be completed during the current year. In Jessore some petty repairs were made by the Local Board of Magura to the embankment which exists along the bank

of the Navaganga to protect the town from flood. A small embankment was constructed by Government in khas mahal Protapkati, in the district of Khulna, for the protection of paddy from the encroachment of salt-water.

100. *Buildings*.—No buildings of any importance were constructed during the year in the 24-Parganas, Nadia, or Murshidabad. In Jessore a *puuka* building was constructed by Government for the subdivisional office and Court at Narail at a cost of about Rs. 14,000. A dispensary building was constructed at Mollahat in Khulna at a cost of Rs. 638. The Government buildings at Berhampore and Jessore were repaired during the year.

101. *Sanitation, water-supply and miscellaneous public improvements*.—The District Board of the 24-Parganas expended Rs. 2,784, against Rs. 6,693 in the previous year, on water-supply. Of this sum, Rs. 2,356 were spent in the excavation or re-excavation of tanks at Rahuta, Dattapukur, Srikrishnapur and Bankipur, and Rs. 116 in sinking wells at Gauripur and Deyganga. A sum of Rs. 2,779 was spent in making sanitary arrangements for the Saugore and Harwa *melas*. The District Board of Nadia expended Rs. 1,728 in the construction and repair of wells. An expenditure of Rs. 1,613 was incurred in Murshidabad in re-excavating three tanks and sinking nine wells. In Jessore Rs. 719 were spent in sinking or repairing wells and making other sanitary improvements. The District Board of Khulna spent Rs. 1,699 for the excavation of three tanks and undertook the completion and fencing of a number of tanks excavated at the time of the scarcity in the Satkhira subdivision at a cost of Rs. 4,099, but the whole work was not completed within the year. A further sum of Rs. 282 was spent by that body for the maintenance of the existing tanks.

XXIV.—COMMUNICATIONS.

102. *Roads*.—Provincial roads to the length of 85½ miles were maintained by the District Board of the 24-Parganas at a cost of Rs. 72,398, the average expenditure per mile being Rs. 848, against Rs. 751 of the preceding year. The condition of these roads is satisfactory. The maintenance of 150 miles of district roads, metalled and bridged, cost the Board Rs. 59,393, or Rs. 396 per mile, against Rs. 354 in the previous year. These roads are generally in fair order. A sum of Rs. 13,872 was spent in maintaining 307½ miles of unmetalled roads, wholly or partially bridged, the average rate being Rs. 53 per mile against Rs. 37 in the previous year. There were also 992½ miles of village roads maintained at a cost of Rs. 13,321. The unmetalled and village roads are generally in passable order. A sum of Rs. 13,481 was spent by the District Board on original works against Rs. 5,267 in 1897-98, and Rs. 1,187 in repairing platforms of some ferry ghats. In Nadia the Board's expenditure on original works was Rs. 3,481, or Rs. 7,608 less than in the preceding year. The expenditure incurred in maintaining the different classes of district roads was Rs. 39,962, against Rs. 43,752, and of village roads Rs. 3,816, against Rs. 4,605 in 1897-98. The flood, which occurred during the year, did great damage to some of the metalled roads and to all unmetalled roads. A sum of Rs. 3,755 was spent by the District Board of Murshidabad on original works against Rs. 2,605 in 1897-98. Of the 1,695½ miles of roads in the district, the maintenance of 24 miles of metalled and bridged roads cost the Board Rs. 9,709; 169½ miles of unmetalled but bridged roads, Rs. 10,411; 350 miles of unmetalled roads partially bridged and drained, Rs. 12,414; and 898 miles of village roads, Rs. 6,259. In Jessore a sum of Rs. 9,434 was spent in repairing 42 miles of Provincial roads, including inspection and *dák* bungalows, bridges, &c., with their establishment; Rs. 34,576 on 110 miles of metalled district roads; Rs. 14,277 on 366½ miles of unmetalled district roads, and Rs. 8,164 on 296 miles of village roads. A sum of Rs. 2,765 was spent on original works. In Khulna there were 486½ miles of district roads and 562 miles of village roads. The district roads were repaired at a cost of Rs. 17,418, and the village roads, of Rs. 12,539. A sum of Rs. 15,140 was spent in bridging and Rs. 2,755, in constructing roads. The District Board also expended Rs. 8,575 in providing landing stages to ferry ghats.

103. *Arboriculture*.—In the 24-Parganas 100 new trees were planted along the different roads during the year and the existing trees were maintained at a

total cost of Rs. 1,447, against Rs. 838 in the previous year. There were about 16,100 trees along Provincial and district roads. A sum of Rs. 764 was spent in Nadia on roadside trees, against Rs. 501 in 1897-98. Among the trees planted, 1,000 were *mahogany* brought from the Botanical Gardens at Sibpur. In Murshidabad Rs. 522, and in Khulna Rs. 221, were spent in planting and rearing trees on roadsides, against Rs. 145 and Rs. 275, respectively, in the previous year. A sum of Rs. 1,238 was spent in Jessore in planting 1,200 trees on roadsides and maintaining the existing trees, against Rs. 639 in the previous year.

104. *Communication by water.*—In the 24 Parganas the Circular Canals (10 miles in length) and Tolly's Nala, including Kawrapukur khal (37 miles) were maintained at a cost of Rs. 45,611, against Rs. 39,748 in 1897-98, while the gross revenue from tolls on these two canals was Rs. 3,68,354, against Rs. 4,08,017 in the previous year. Two thousand six-hundred and seventy-two steamers passed through the Sundarbans channel, against 2,497 in 1897-98, yielding a gross revenue of Rs. 13,360 in tolls, against Rs. 12,485 in the previous year. The Bhangore khal, which was completed last year, is now in working order. For a few months during the year a ferry steamer of Messrs. Hoare, Miller and Company plied regularly twice daily between Azimganj and Berhampore in Murshidabad, but owing to the want of sufficient water in the river, the service had to be stopped, as in the previous year, in October; and the steamer now runs between Lalbagh and Azimganj. Another steamer of Messrs. Hoare, Miller and Company plied twice a week for some months between Azimganj and Dhuliyān. A third steamer belonging to the same Company carried passengers and goods between Calcutta and Jangipur during a part of the year. In Jessore and Khulna a steamer used to ply between Jhinkargatcha and Kapilmani. A launch service was started by Babu Satindra Nath Rai Chowdry, Zamindar of Satkhira, between Jadubpur and Satkhira, but the project fell through, as the river Betna, by which the route lay, was not passable at places. There were two daily steamer services, one between Khulna and Barisal, and another between Calcutta and Morrellganj. Another steamer service runs between Khulna and Narail. Since the close of the year a new steamer service has been started between Khulna and Barisal by the Atharabanki river, the route by the Alaipur khal, Bagerhat and Pirojpur being given up.

XXVL—EDUCATION.

106. *General.*—The following table compares the statistics of educational institutions of all classes for the past two years:—

CLASS OF INSTITUTIONS.			1897-98.		1898-99.	
Public Institutions—			Schools.	Pupils.	Schools.	Pupils.
Secondary	{ High English	...	81	13,984	86	16,446
	{ Middle "	...	172	13,452	168	12,809
	{ " Vernacular	...	220	13,678	214	12,723
Primary	{ Upper	...	509	22,552	519	23,737
	{ Lower	...	3,972	126,438	3,861	125,755
Special	...	...	9	275	62	856
Female	...	...	403	9,711	410	9,883
Total of Public Institutions			5,366	199,990	5,310	201,209
Private Institutions—						
Advanced, teaching	{ Arabic	...	3	83	3	78
	{ Sanskrit	...	90	316	39	286
Elementary, teaching vernacular only or						
mainly			...	...	...	...
Teaching the Koran only			...	...	...	...
Total Private Institutions			110	1,187	61	619
GRAND TOTAL			5,476	201,177	5,371	201,828

The total number of institutions, public and private, decreased by 105, but the pupils attending them increased by 651. The public institutions fell off from 5,366 to 5,310, though the pupils attending them rose from 199,990 to 201,209. The schools which gained both in number and pupils were the

high English, upper primary, special and female, while both the classes of middle schools as well as the lower primary schools slightly decreased. The private institutions decreased from 110 with 1,187 pupils to 61 with 619 pupils. The decrease is mainly noticeable in advanced Sanskrit teaching.

107. The statement below compares the expenditure on education during the past two years :—

HEADS OF CHARGES.	1897-98.					1898-99.				
	Government.	District funds.	Municipal funds.	Private sources.	Total.	Government.	District funds.	Municipal funds.	Private sources.	Total.
1	2	3	4	5	6	7	8	9	10	11
Secondary education ...	Rs. 81,310	Rs. 38,867	Rs. 2,635	Rs. 3,73,850	Rs. 4,06,662	Rs. 76,839	Rs. 39,706	Rs. 1,322	Rs. 3,47,578	Rs. 5,05,445
Primary ditto ...	9,511	62,104	12,050	2,25,107	3,08,772	9,770	61,475	11,204	2,31,247	3,24,766
Female ditto ...	12,861	4,500	2,270	43,413	62,215	12,624	5,169	1,776	42,481	62,039
Special ditto ...	29,846	...	132	13,892	37,670	27,540	...	343	27,915	55,892
Scholarships ...	5,634	2,308	...	42	11,074	8,211	2,600	...	73	10,884
Buildings and furniture, &c. ...	5,934	551	1,343	22,652	30,680	12,912	480	310	21,143	31,845
Miscellaneous ...	16,458	4,990	1,318	35,083	57,708	6,109	3,911	615	35,429	46,064
Inspection ...	42,051	27,863	...	...	79,914	43,936	31,001	...	...	75,937
Total ...	1,99,405	1,51,431	19,788	7,14,079	10,84,703	1,97,947	1,48,391	16,628	7,59,870	11,15,746

The total expenditure shows an increase by Rs. 31,043, owing solely to increased contributions from private sources. The expenditure from Provincial revenues decreased by Rs. 1,458, that from district funds by Rs. 3,130, and that from municipal funds by Rs. 4,160. The expenditure increased under the heads of Secondary, Primary and Special Education and Buildings and Furniture, while it decreased under the heads of Female Education, Scholarships, Miscellaneous and Inspection. The increase of Rs. 18,132 under the head of Special Instruction is said to be due to the inclusion under this head of such Sanskrit *tois* as have adopted the Government standard, the expenditure on them having in previous years been shown as a part of miscellaneous charges. This also accounts for the falling off in miscellaneous expenditure.

108. The following statement compares the different classes of schools under the control of District Boards :—

DISTRICT.	1897-98.								1898-99.							
	Aided.		Middle vernacular.		Aided primary.		Aided girls.	Total.	Aided.		Middle vernacular.		Aided primary.		Aided girls.	Total.
	High English.	Middle English.	Managed by District Boards.	Aided by District Boards.	Upper.	Lower.			High English.	Middle English.	Managed by District Boards.	Aided by District Boards.	Upper.	Lower.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
24-Parganas ...	...	17	3	30	54	945	15	1,104	...	18	3	20	60	979	19	1,108
Nadia ...	...	30	3	14	72	489	54	653	...	20	3	14	80	460	65	660
Murshidabad ...	...	12	...	12	60	459	19	562	...	12	...	12	58	440	15	543
Jessore ...	...	12	...	24	131	659	87	923	...	23	...	24	142	604	92	861
Khulna ...	1	23	2	27	75	585	30	743	...	23	...	27	74	634	36	796
Total ...	1	94	8	107	392	3,178	205	3,985	1	105	8	120	414	3,133	227	4,068

The number of schools under the control of District Boards increased by 23. The increase is shared by the 24-Parganas, Nadia and Khulna, while Murshidabad and Jessore show a falling off, chiefly in the number of lower primary schools.

109. There are three colleges in this Division sending up pupils for examination in Arts—the Krishnagar College in Nadia, the Berhampore College in Murshidabad, and the Narail Victoria College in Jessore. The first two teach up to the B.A. standard, and the last, F.A. standard. A sum of Rs. 21,781 was spent in maintaining the Krishnagar and Rs. 3,879 the Narail Victoria College

during the year, of which Rs. 14,604 and Rs. 1,200 were paid by Government. The cost of maintenance of the Berhampore College amounted to Rs. 26,416, of which Rs. 5,638 were met from fees, and the rest from the estate of Maharaja Manindra Chandra Nandi. The scheme for the management of the institution permanently by the Maharaja, as referred to in my last report, has been generally settled and a draft deed is now under preparation.

110. The subjoined table compares the statistics of high English, middle English and middle vernacular schools for the past two years :—

				1897-98.		1898-99.	
				Schools.	Pupils.	Schools.	Pupils.
High English—							
Managed by Government	...	...	...	7	1,651	7	1,874
Do. by District or Municipal Boards	...	...	...	1	328	1	362
Aided by Government, District or Municipal Boards	...	...	...	56	8,940	56	9,349
Unaided	...	...	...	17	3,055	22	3,861
Total	...	...	...	81	13,984	86	15,446
Middle English—							
Managed by Government	...	...	...	...	...	...	...
Do. by District or Municipal Boards	...	...	...	...	...	...	...
Aided by Government, District or Municipal Boards	...	...	...	117	9,383	127	9,847
Unaided	...	...	...	55	4,089	41	2,962
Total	...	...	...	172	13,462	168	12,809
Middle Vernacular—							
Managed by Government	...	...	...	1	85	1	97
Do. by District or Municipal Boards	...	...	...	8	587	8	544
Aided by Government, District or Municipal Boards	...	...	...	184	11,258	187	10,850
Unaided	...	...	...	27	1,648	18	1,232
Total	...	...	...	220	13,578	214	12,723
GRAND TOTAL	...	...	...	473	41,014	468	40,978

The number of secondary schools and of the pupils attending them decreased by 5 and 36 respectively, that of the high English schools increased by 5, and the pupils attending them by 1,462. Middle vernacular schools decreased by 6 and their pupils by 855, and middle English schools by 4 and their pupils by 643.

111. The statement below shows the statistics of primary schools for native boys for the past two years :—

				1897-98.		1898-99.	
				Schools.	Pupils.	Schools.	Pupils.
Upper Primary—							
Managed by Government, District or Municipal Boards	...	...	...	...	...	...	...
Aided by Government, District or Municipal Boards	...	...	...	500	22,218	509	23,200
Unaided	...	...	...	9	834	10	537
Total	...	...	...	509	22,552	519	23,737
Lower Primary—							
Managed by Government, District or Municipal Boards	...	...	...	...	...	...	...
Aided by Government, District or Municipal Boards	...	...	...	3,541	1,16,165	3,480	1,15,798
Unaided	...	...	...	431	10,273	371	9,957
Total	...	...	...	3,972	1,26,438	3,851	1,25,755
GRAND TOTAL	...	...	...	4,481	1,48,990	4,370	1,49,492

The number of upper primary schools increased by 10 and their pupils by 1,185, but that of the lower primary schools diminished by 121 and the pupils attending them by 683. Thus there was a net decrease of 111 in the number of primary schools but a net increase of 502 in that of pupils attending them.

112. The following table shows the different classes of special schools for Special instruction. the past two years:—

		1897-98.		1898-99.	
		Schools.	Pupils.	Schools.	Pupils.
Training schools for masters	...	2	54	2	44
Ditto for mistresses	...	4	145	4	143
Industrial schools	...	2	25	2	29
Other schools	...	...	...	53	584
Total	...	8	224	61	800

The year under report shows a large increase both in the number and attendance of special schools, owing, as already reported, to the classification of a number of Sanskrit *cols*, which have adopted the Government standard, under this head.

113. The table below compares the number of girls' schools and pupils as well as the expenditure incurred during the past two years:—

		1897-98.			1898-99.		
		Schools.	Pupils.	Expenditure. Rs.	Schools.	Pupils.	Expenditure. Rs.
Managed by Government	...	...	...	...	...	...	...
Do. by District or Municipal Boards	...	1	48	224	1	45	227
Aided by Government, District or Municipal Boards	...	366	9,026	60,878	369	9,153	60,882
Unaided	...	36	637	1,111	40	685	1,180
Total	...	403	9,711*	62,213	410	9,883†	62,039
Girls in boys' schools	...	...	4,076	...	...	8,823	...
GRAND TOTAL	...	403	13,787	62,213	410	13,706	62,039

* Includes 153 boys in girls' schools.
† Ditto 282 ditto ditto.

The number of girls' schools and that of the pupils attending them show some increase, the former by 7 and the latter by 172. Owing to a falling off in the number of girls attending boys' schools and to an increase in that of boys reading in girls' schools, the total number of female scholars in schools for general education diminished, being 13,424 during the year under report, against 13,634 in the preceding year. The total expenditure incurred in female education decreased by Rs. 174.

114. The following table exhibits the number of Muhammadan pupils and their proportion to the total number of pupils in the different classes of schools for the past two years, district by district:—

DISTRICT.	1897-98.			1898-99.		
	Total number of pupils.	Number of Muham- madan pupils.	Percentage of Muham- madan pupils to total number of pupils.	Total number of pupils.	Number of Muham- madan pupils.	Percentage of Muham- madan pupils to total number of pupils.
1	2	3	4	5	6	7
24-Parganas ...	72,571	16,044	22.1	73,267	15,630	21.4
Nadia ...	32,752	8,811	26.9	33,351	9,015	27.03
Murshidabad ...	27,026	8,756	32.4	26,450	8,310	31.4
Jessore ...	38,677	12,998	33.6	36,407	13,034	35.8
Khulna ...	30,151	8,799	29.1	32,353	9,543	29.4
Total ...	201,177	55,408	27.5	201,828	55,532	27.51

The total number of Muhammadan pupils at school and their percentage show but very slight increase. The number of Muhammadan pupils in the 24-Parganas and Murshidabad has decreased, while it increased in the other districts. The result is on the whole satisfactory as showing that the Muhammadan community is gradually realizing the gravity of their situation as a backward people in comparison with their Hindu brethren.

The following statement shows the results attained by Muhammadan candidates at different departmental examinations:—

DISTRICT.	1897-98.			1898-99.		
	Middle scholarship examination.	Upper primary scholarship examination.	Lower primary scholarship examination.	Middle scholarship examination.	Upper primary scholarship examination.	Lower primary scholarship examination.
1	2	3	4	5	6	7
24-Parganas	6	4	211	9	15	353
Nadia	12	11	123	15	13	242
Murshidabad	9	15	216	15	38	397
Jessore	8	14	173	20	35	304
Khulna	8	19	108	11	31	131
Total	43	63	831	70	132	1,427

The result is very satisfactory as compared with that of the preceding year. 115. The following table shows the distribution of pupils of aboriginal Education of aboriginal and other backward races at school for the last two backward races. years:—

YEAR.	High schools.	Middle schools.	Primary schools.	Girls' schools.	Special schools.	Total.
1	2	3	4	5	6	7
1897-98	4	72	...	1	77
1898-99	3	183	10	5	201

It is satisfactory to note that the number of aboriginal pupils has risen by 124.

116. The statistics of indigenous scholols of all classes are compared in the following table, district by district:—

DISTRICT.	Year.	ARABIC OR PERSIAN.		SANSKRIT.		ELEMENTARY.		KORAN.	
		Schools.	Pupils.	Schools.	Pupils.	Schools.	Pupils.	Schools.	Pupils.
1	2	3	4	5	6	7	8	9	10
24-Parganas	1897-98 ... ..	...	...	22	290	3	23	11	232
	1898-99	1	32	11	73	...	...	5	102
Nadia	1897-98 ... ..	...	...	40	330	...	...	...	...
	1898-99 ... ..	...	...	16	118	...	...	...	...
Murshidabad	1897-98	1	41	10	82	...	...	...	...
	1898-99	1	24	4	26	1	8	...	...
Jessore	1897-98	1	10	14	136	2	16	1	17
	1898-99 ... ..	...	...	7	63	5	67	...	...
Khulna	1897-98	1	32	4	38	...	...	...	...
	1898-99	1	32	1	6	7	52	1	16
Total	1897-98	5	63	90	616	5	59	13	749
	1898-99	3	98	29	280	13	127	6	118

Narail and Magura Local Boards in Jessore, and the Khulna and Bagerhat Local Boards in Khulna, held less than twelve meetings, the number of meetings held by the Jangipur Local Board, viz., five being specially unsatisfactory. The average attendance of members was lower in the Local Boards of Alipore, Krishnagar, Ranaghat, Berhampore, Kandi, Jangipur, Jessore, Bongaon, Jhenidah, Magura, Khulna, Bagerhat and Satkhira.

128. The following statement shows the ordinary income of each District Board, including grants for Provincial works, and the expenditure incurred on civil works, sanitation and water-supply, medical relief and education for the past two years:—

District.	Year.	Ordinary income, including grant for Provincial works, if any.	EXPENDITURE ON—					
			Civil works, including Public Works establishment.	Sanitation and water-supply.	Medical relief.	Primary education.	Education other than primary.	Total education.
1	2	3	4	5	6	7	8	9
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
24-Parganas	1897-98 ...	2,59,546	1,72,184	10,114	1,811	32,388	12,917	45,305
	1898-99 ...	2,66,232	1,93,419	6,254	3,343	33,289	12,921	46,210
Nadia	1897-98 ...	1,15,270	70,474	1,241	1,987	19,272	12,996	32,269
	1898-99 ...	1,24,849	65,843	1,728	1,656	17,753	12,696	30,449
Murshidabad	1897-98 ...	90,109	53,098	6,118	1,310	15,530	4,915	20,445
	1898-99 ...	93,865	54,083	2,313	1,650	14,168	4,696	18,762
Jessore	1897-98 ...	2,00,133	1,43,456	5,828	5,413	19,629	7,118	26,747
	1898-99 ...	1,74,566	1,27,283	719	5,005	19,697	8,518	24,215
Khulna	1897-98 ...	1,12,022	65,003	6,482	4,194	16,764	12,068	28,832
	1898-99 ...	1,11,584	63,436	5,677	4,243	17,038	10,094	27,132

The expenditure on civil works increased in the 24-Parganas, Murshidabad and Khulna, while it fell off in Nadia and Jessore, all the District Boards except Nadia have reduced their expenditure on sanitation and water-supply, the reduction is marked in the 24-Parganas, Murshidabad and Jessore. This is not satisfactory. The District Boards of the 24-Parganas, Murshidabad and Khulna have spent more on medical relief than in the preceding year. The expenditure on primary education increased in the 24-Parganas, Jessore and Khulna, while it fell off in Nadia and Murshidabad, and that on education other than primary increased in the 24-Parganas and Jessore only.

Municipalities.

130. There was no change during the year either in the number of municipalities in the Division which remained the same, viz., 40, or in their constitution. The elective system is in force in all the municipalities except Garden Reach, Titagar, Garulia, Chakdaha, Khulna and Debhata, where the Commissioners are appointed by Government; while in the municipalities of Garden Reach, Baraipur, Santipur, Garulia, Barnagore, Chakdaha, Kandi and Moheshpur, the Chairman is appointed by Government. At Jangipur the Municipal Commissioners on the resignation of their Chairman, Babu Krishna Ballab Ray, took the wise step of getting Babu Chandra Nath Ghosh, the Sub-divisional Officer, appointed as their Chairman, and the results are reported to be already beneficial. During the year general elections were held in the municipalities of Cossipore-Chitpur and Manicktola, and great interest was displayed in choosing the representatives. There were altogether seventeen bye-elections held during the year, of which one failed in Kumarkhali and two in Murshidabad; the vacancies were filled up by the appointment of Commissioners under section 16 of the Municipal Act. The following table shows the total

income, including balance and expenditure of the municipalities in different districts, as compared with the preceding year:—

DISTRICT.	Income.		Expenditure.		REMARKS.
	1897-98.	1898-99.	1897-98.	1898-99.	
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	
24-Parganas ...	4,99,900	5,53,322	4,21,547	4,72,701	*Including a loan of Rs. 28,000 taken from Government by the Krishnagar Municipality.
Nadia ...	1,19,605	1,62,858*	1,07,311	1,16,718	
Murshidabad ...	1,05,148	1,07,508	94,257	97,202	
Jessore ...	31,656	27,293	29,380	25,869	
Khulna ...	27,041	32,516	21,008	25,259	
Total ...	7,83,350	8,83,497	6,73,507	7,37,749	
Increase ...	1,00,147	...	64,242	...	
Decrease ...	...	...	...	...

131. There was an increase, both in the receipts and disbursements, in all the districts except Jessore, where there was a decline in both. The increase in receipts is chiefly due to improvement in the collections resulting from stricter supervision and partly to the inclusion of the amount of the loan of Rs. 28,000 taken by the Krishnagar Municipality for the improvement of the drainage of the town. The rise in expenditure is a natural consequence of the improvement in the receipts. The following statement shows the number of meetings held in each municipality during the past two years and the average percentage of attendance of Municipal Commissioners at each of them:—

NAME OF MUNICIPALITY.	Number of meetings held in —		Average percentage of attendance at each meeting.		REMARKS.
	1897-98.	1898-99.	1897-98.	1898-99.	
Cossipore-Chitpur ...	30	26	64·7	76·6	
Maniktala ...	15	24	61·3	62·9	
Baranagore ...	14	17	71·4	59·9	
South Suburban ...	17	14	33·3	33·3	
Rajpur ...	10	16	69·0	58·1	
Baruipur ...	24	19	66·2	68·4	
Joynagore ...	16	16	56·2	43·7	
South Dum-Dum ...	14	12	66·0	57·4	
North Dum-Dum ...	18	23	67·8	57·4	
South Barrackpore ...	16	13	51·7	39·7	
North Barrackpore ...	13	8	61·02	57·5	
Barasat ...	17	15	63·0	47·0	
Naihati ...	18	18	61·1	48·1	
Gobardanga ...	11	9	51·5	33·3	
Basirhat ...	20	17	50·0	50·9	
Baduria ...	14	16	52·08	70·5	
Taki ...	16	12	38·8	43·5	
Titagar ...	16	16	56·9	61·1	
Garulia ...	12	13	73·1	67·5	
Garden Reach ...	12	9	65·2	56·4	
Krishnagar ...	19	15	63·1	73·3	
Santipur ...	27	33	40·3	42·4	
Ranaghat ...	21	30	28·06	29·3	
Nadia ...	16	15	49·3	43·3	
Kushtia ...	28	27	17·8	17·0	
Kumarkhali ...	23	17	34·7	35·2	
Meherpur ...	16	20	38·1	25·5	

NAME OF MUNICIPALITY.	Number of meetings held in—		Average percentage of attendance at each meeting.		REMARKS.
	1897-98.	1898-99.	1897-98.	1898-99.	
Birnagar	14	12	50·8	43·9	
Chakdaha	16	20	45·0	31·0	
Berhampore	17	20	46·6	40·8	
Murshidabad	22	27	56·9	45·8	
Jangipur	15	13	33·3	41·6	
Kandi	22	11	59·09	50·9	
Azimganj	21	21	46·6	41·2	
Jessore	14	21	51·2	59·1	
Kotechandpur	21	25	42·8	47·5	
Moheshpur	22	18	59·09	58·3	
Khulna	20	20	33·5	33·5	
Satkhira	16	15	53·1	54·1	
Debhatta	19	20	50·0	44·6	

132. In 18 out of the 40 municipalities, the average percentage of attendance was over 50, against 25 municipalities showing such a percentage in the year 1897-98 and 21 and 13 in the two preceding years. The result is therefore not satisfactory when compared with the figures of the preceding years. The percentage was specially high in the municipalities of Cossipore-Chitpur, where it was 76·6, and Krishnagar, where it was 73·3. The lowest percentage was again attained by the Kushtia and Ranaghat Municipalities, where the percentage was 17·0 and 29·3, respectively, against 17·18 and 28·06 of the preceding year. The following are some of the important works of improvement executed by several of the municipalities during the year. In Cossipore-Chitpur 5,039 feet of 2"-pipes were laid, nine hydrants erected, four standposts purchased, nine platforms constructed, and sundry stores, fittings, &c., supplied for the maintenance of the water-supply system at a total cost of Rs. 2,902. Roadside *nikasi* drains were constructed in different parts of the town to the extent of 3,407 feet at a total cost of Rs. 4,871. Certain fair-weather roads received the first coat of metal during the year at a cost of Rs. 1,157, and particular attention was paid to *busti* improvement and sanitation. In Manicktola 2,598 feet of filtered water-pipes were laid and six additional hydrants provided at a cost of Rs. 2,017; 2,017 feet of patent stone saucer drains were constructed at a cost of Rs. 2,166, and an office building with an outdoor dispensary has been started and is fast approaching completion at an estimated cost of Rs. 12,600. In Berhampore, the water-works for the supply of filtered water to the residents were nearly completed by the end of the year, at a cost of about rupees two lakhs and-a-half, given by the late Maharani Surnomoyi. The water-works have since been completed and opened by His Honour the Lieutenant-Governor on the occasion of his recent visit to Berhampore.

134. The remarks recorded by me in the previous year's report still generally apply. The only satisfactory feature in the municipal administration during the year is the improvement in the matter of collection due to special pressure put by me upon the Municipal authorities. Want of supervision and a general reluctance on the part of the municipal executive to resort to coercive measures, caused by the fear of becoming unpopular, and consequent laxity in the observance of the rules, still prevail, but the constant issue by me of orders and circulars and the close watch kept by myself and the Magistrates on their working have produced the improvement indicated by the figures, particularly in some important municipalities which are most backward in this respect, such as Krishnagar, Santipur, South Suburban, etc., etc. To enforce responsibility in this respect I thought it fit to establish a system of a sliding scale of punishments and rewards for bad and good collections. It remains to be seen whether this system will prove effective. I have been strictly enforcing the said system and expect to show better and more satisfactory results in the next report.

XXXII.—POST-OFFICES AND TELEGRAPHS.

136. The subjoined table shows the number of post-offices and the number and mileage of the mail lines during the year under report :—

DISTRICT.	NUMBER OF POST-OFFICES.			MAIL LINES.					
	Imperial.	Zamindari.	Total.	Imperial.		Zamindari.		Total.	
				Number.	Average mileage.	Number.	Average mileage.	Number.	Average mileage.
1	2	3	4	5	6	7	8	9	10
24-Parganas ...	87	9	96	...	...	...	...	56	396
Nadia ...	97	6	103	45	313½	12	143	57	456½
Murshidabad ...	50	5	55	10	169½	17	237	27	406½
Jessore ...	75	6	81	15	126	20	170	35	296
Khulna ...	59	5	64	4	9	14	22	18	31

The number of Imperial post-offices increased in all the districts except Jessore, where it remained stationary. The increase in the 24-Parganas is considerable, being from 65 to 87. There was no change in the number of zamindari post-offices in any district. The mail lines increased by one in number in each of the districts of the 24-Parganas and Nadia; in Murshidabad and Jessore the number remained the same as in the previous year, while in Khulna it decreased from 43 to 18. There was a large decrease in the average mileage in the 24-Parganas, Nadia and Khulna.

137. The following statement shows the number of letters, etc., received for despatch and issued for delivery during the year :—

DISTRICT.	Number of letters, etc., in 1897-98.	Number of letters, etc., in 1898-99.
24-Parganas ...	12,915,474	14,030,198
Nadia ...	5,643,456	6,273,094
Murshidabad ...	(Not given)	(Not given)
Jessore ...	772,980	4,948,916
Khulna ...	(Not given)	(Not given)

138. The statement below shows the working of the general telegraph offices during the past two years :—

DISTRICT.	Number of combined post and telegraph offices.		Messages sent.		Messages received.	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7
24-Parganas ...	18	18	25,820	23,318	23,778	24,578
Nadia ...	6	6	4,018	4,140	4,023	4,223
Murshidabad ...	6	4	4,198	3,677	3,118	3,781
Jessore ...	5	5	2,083	2,140	2,173	2,538
Khulna ...	3	3	2,974	3,617	3,022	2,750
Total ...	38	36	39,093	36,892	37,803	36,878

139. The number of combined post and telegraph offices in each district remained the same as in the preceding year. The messages sent in Nadia, Jessore and Khulna and those received in the 24-Parganas, Nadia and Jessore increased in number. A telegraphic line has been constructed between Basirhat and Satkhira. It is reported to be complete, and will be opened soon to the public. This will reduce, in some respect, the difficulties of rapid communication with Satkhira, as noticed in my last report.

The relations between the District Boards in the Division and the Education Department continued to be cordial. There was no friction between them. The suggestions made by the officers of the Education Department were generally accepted. The Chairman of the District Board of the 24-Parganas has, however, in a representation to the Director of Public Instruction protested against the elimination of mensuration and zamindari and mahajani accounts from the Lower Primary Scholarship examination. I agree with his views in the matter, as the subjects are of vital importance to the children of the masses.

XXVII.—DISPENSARIES AND HOSPITALS.

117. There were 66 dispensaries and hospitals in the Division, or one more than in the previous year, the dispensary at Mollahat in the district of Khulna having been newly added to the list. The following statement shows the number of dispensaries in each district and the number which receive both indoor and outdoor patients or outdoor patients only:—

DISTRICT.	Number of dispensaries receiving both in and out-patients.	Number of dispensaries receiving out-patients only.	Total number of dispensaries.
1	2	3	4
24-Parganas ...	10	20	30
Nadia ...	6	5	11
Murshidabad ...	6	2	8
Jessore ...	4	5	9
Khulna ...	3	5	8
Total ...	29	37	66

118. In the 24-Parganas the number of dispensaries remained the same as in the previous year (viz., 30). It appears that the Sambhunath Pandit Hospital in Bhawanipur, the Alipore Police Hospital, and the Alipore Reformatory School hospital have been excluded from the list, while the newly opened dispensary at Budge-Budge and the dispensaries at Maniktala and South Dum-Dum, which had been erroneously excluded from previous lists, have been added to the list for the first time. No explanation has been submitted by the Magistrate as to why the three first-named dispensaries have been excluded from the list. The most important hospitals in this district are the Sagore Dutt hospital at Kamarhati and the North Suburban Hospital at Cossipore, the number of in-patients treated in them being 731 and 490 respectively, and the number of out-patients 13,556 and 7,745. Among the outdoor dispensaries, Chitpur stood first, the number of patients treated during the year being 11,011, Nimita second, the number of patients being 8,682, and Chetla third, the number being 6,132. Most of the dispensaries show a falling off in attendance, partly owing to the plague scare, which specially affected the dispensaries in the suburbs of Calcutta during the months of April, May and June, and partly owing to the improved healthiness of the year. The dispensaries at Barisa, Baruipur and Taki were badly managed. The management of the last-named dispensary has been taken over by the District Board from the 1st April 1899.

In all the dispensaries in the district there are arrangements for waiting rooms for females. The total income of the dispensaries was Rs. 58,241, of which the municipalities contributed Rs. 17,743, the District Board Rs. 2,479, and Government Rs. 3,952. The balance Rs. 34,067, was met from private subscriptions, endowments, etc. The total expenditure amounted to Rs. 56,562.

119. The following statement shows the working of the Lunatic Asylums at Bhowanipur and Dullunda and the Campbell Hospital at Sealdah:—

NAME OF INSTITUTION.	Average number of patients treated daily.		Cost incurred by Government.	
	1897.	1898.	1897.	1898.
1	2	3	4	5
			Rs	Rs.
Bhowanipur Lunatic Asylum ...	37	36.9	21,192	20,809
Dullunda ditto ...	246.7	218.3	32,061	26,696
Campbell Hospital ...	813.8	552.8	1,21,893	1,55,279

120. In Nadia the most important dispensaries are those at Krishnagar, Meherpur and Kushtea, the number of indoor patients treated in them being 306, 24, and 70, respectively, and outdoor patients 8,084, 4,499 and 3,915. Among the outdoor dispensaries Ula or Birnagar stood first, the number of patients treated in it being 4,706, and Chuadanga second, the number of patients being 3,928. The total attendance in the dispensaries rose from 38,978 to 42,171. The income of the dispensaries amounted to Rs. 13,660, of which the largest portion, viz., Rs. 8,535, was contributed by municipalities, Rs. 1,710 by the District Board, Rs. 244 by Government, and Rs. 3,171 were met from private subscriptions. The total expenditure was Rs. 12,682. Besides these, there are seven private dispensaries, of which the Church Mission Society's dispensary at Santirajpur afforded relief to 7,532 outdoor patients. The Ranaghat Medical Mission under Mr. James Munro, C.B., late of the Bengal Civil Service, also maintains a dispensary where a large number of both indoor and outdoor patients is treated. The others are (1) the new dispensary opened by Mr. Munro at Kaliganj, about 3 miles from Chakda; (2) the Natuda dispensary maintained by the Paul Chaudhurries of that place; (3) the Nistarini dispensary at Meherpore maintained from the assets of the property set apart for the purpose by the founder, Nistarini Gupta, and (4) the Munshiganj Garrett Charitable Dispensary maintained by local subscriptions.

121. In Murshidabad the Girish Chandra Hospital at Kandi continues to do useful work, the number of in-patients being 257 and out-patients 13,059. The Berhampore and Murshidabad dispensaries treated 514 and 229 in-patients and 11,189 and 13,761 out-patients. The Arnakali Zamana Hospital, which had been maintained by public subscriptions from the beginning of the year under review, was closed from the 1st October 1898, as it was not considered to answer the purpose of a Zamana Hospital for want of suitable arrangements. The Berhampore Municipality having promised to entertain the services of a qualified lady doctor, the savings effected and the residue of subscriptions collected and promised were devoted to erecting a female ward in the Berhampore dispensary compound. The total income of the dispensaries in the district was Rs. 25,473, of which the municipalities contributed Rs. 10,103, the District Board Rs. 1,180, Government Rs. 1,142, and the balance, Rs. 13,048, was met from private subscriptions and endowments. The total expenditure was Rs. 24,968. There are three private dispensaries, one at Islampur and one at Lalgola, maintained by the local zamindars, and one at Saidabad, maintained by the late Rai Mukunda Lal Burman Bahadur. These dispensaries are well managed and supply a want felt by the people in the parts of the district where they are located. The last-named dispensary has done good work, and has been of great benefit to the poor.

122. In Jessore the dispensaries at Jessore, Magura, Narail and Kotchandpur afforded relief to both indoor and outdoor patients, and the rest to outdoor patients only. There was an increase in the number of indoor patients in the Jessore dispensary alone and decrease in all others. The number of outdoor

patients increased at the Narail and Sridharpur dispensaries, but decreased in all others. The total income of all the dispensaries during the year was Rs. 9,554, of which the municipalities paid Rs. 3,651, the District Board Rs. 3,232, Government Rs. 928, and the balance, Rs. 1,743, was met from private subscriptions. The total expenditure was Rs. 9,528. There was besides a dispensary maintained by the Narail zamindars at Rupganj Bazar, Narail, under the superintendence of an Assistant Surgeon.

123. In Khulna the dispensaries at Khulna, Bagerhat, and Satkhira afforded both indoor and outdoor relief and the rest outdoor relief only. The attendance of patients has increased considerably in all the dispensaries except those at Satkhira and Bagerhat. The total income of the dispensaries was Rs. 9,936, of which Rs. 2,396 were contributed by the municipalities, Rs. 4,415 by the District Board, Rs. 612 by Government, and the balance, Rs. 2,512, was met from other sources. Almost the whole of the income was expended during the year. Besides the above, two dispensaries are maintained by private individuals, viz., one at Nakipur maintained by Rai Hori Charan Rai Chaudhury Bahadur, the zamindar of the place, and the other at Morrellganj by Maharaja Durga Charan Law of Calcutta.

XXVIII.—LIBRARIES.

124. As reported in previous years, the public libraries in this Division are neither numerous nor important. In the 24-Parganas there is no public library worthy of mention. In Nadia there are six libraries:—(i) The Rivers Thompson Library at Ranaghat, which exists only in name; (ii) The Ranaghat Students' Library, which is intended for students and the local public, for whom a reading-room is available every afternoon; (iii) the *Vinapani* Library at Harodham; (iv) the Issur Chunder Gupta Library at Kauchrapara; (v) the library attached to the Santipur High School, which is supported by the Municipality, and (vi) the library at Meherpore, maintained by the Malik Babus of the place, which is reported to contain about 700 books. The only library in Murshidabad, known as the Berhampore Public Library, is practically a book club. During the year under report the building in which the public library at Jessore was located was sold for want of funds to maintain it and the proceeds held in the Savings Bank to the credit of the library. It is reported that the amount of local subscription is too small to maintain a librarian and a peon, and though attempts were made during the year to increase the number of subscribers, they were unsuccessful. The pleaders, who represent the reading public, do not care much for this library. The Government school at Jossore has a small library attached to it for the use of the teachers and pupils of that institution. The civil officers and other members of the European community at the sadar station have a club in which English journals are imported from England. Besides these, there are two other libraries, one at Magura and the other at Kalia, which are maintained by local subscriptions. As stated in the last year's report, there are several small libraries at Satkhira, Sripur, Magura, Khesra and Bagerhat, maintained by funds locally raised. A small library has been opened at Kukrul during the year. The Khulna Library depends on monthly subscriptions and donations paid by the public. The district and the subdivisional libraries are reported to be in good order.

XXX.—LOCAL SELF-GOVERNMENT INSTITUTIONS.

126. The year under report was the thirteenth of the operation of the Bengal Local Self-Government Act, III of 1885, in this Division. There was on change in the constitution of the 5 District Boards or the 22 Union Committees. The Local Boards were reconstituted towards the close of the year, the number of Local Boards having increased from 19 to 20, owing to the re-establishment of the Chuadanga Local Board. The following statement

shows the number of meetings held by each District and Local Board and the average attendance of members at each meeting:—

District Boards.

DISTRICT.	Number of meetings held.		Average attendance at each meeting.	
	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5
24-Parganas ...	15	12	16·8	15·9
Nadia ...	18	15	12·8	13·0
Murshidabad ...	9	6	12·2	10·0
Jessore ...	20	12	15·9	13·9
Khulna ...	12	18	10·5	8·8

Local Board's.

DISTRICT.	Name of Local Board.	Number of meetings held.		Average attendance at each meeting.	
		1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6
24-Parganas ...	Alipore ...	12	12	7·6	6·7
	Diamond Harbour ...	16	14	5·6	6·2
	Barasat ...	12	16	7·0	8·2
	Basirhat ...	12	8	3·5	4·2
	Krishnagar ...	9	8	4·2	4·0
Nadia ...	Meherpur ...	3	8	4·1	5·0
	Kushtea ...	8	11	4·1	4·2
	Chuadanga ...	...	...	...	...
Murshidabad ...	Ranaghat ...	11	8	5·8	4·6
	Berhampore ...	5	6	9·2	5·3
	Kandi ...	9	9	7·3	5·5
	Jangipur ...	11	5	5·7	3·6
Jessore ..	Jessore ...	19	16	4·9	4·2
	Bongaon ...	10	11	6·9	4·1
	Jhenida ...	10	9	5·0	3·0
	Narnail ...	12	10	5·4	6·8
Khulna ...	Magura ...	13	10	5·3	5·0
	Khulna ...	10	9	5·7	5·0
	Bagerhat ...	8	8	6·0	5·5
	Satkhira ...	4	13	7·7	5·0

127. The number of meetings held by all the District Boards except Khulna fell off during the year. The District Board of Murshidabad held only six meetings as against nine in the previous year. The Chairman explains that as there is considerable cost in travelling allowance to be incurred, meetings are not called unless there is business to be transacted. The average attendance of members at each meeting was lower in all the districts except Nadia, where it slightly improved. The Local Boards in the districts of Nadia and Murshidabad, the Basirhat Local Board in the 24-Parganas, the Bongaon, Jhenidah,

FAIRS.

143. The most important fairs held in the 24-Parganas are the Gangasagar *mela*, Pir Gora Chand's *mela* and Ghazi Saheb's *mela*. The Gangasagar fair, which is a Hindu bathing festival, lasted from the 12th to the 14th January, the number of persons who attended it being 24,500, against 40,000 in the preceding year. The decrease in the number of pilgrims is due to the plague scare. Sanitary and conservancy arrangements were as usual made by the District Board. A hospital with a dispensary in charge of a Civil Hospital Assistant was provided. There were 93 cases of dyspepsia, diarrhoea and fever, which were all successfully treated, and five cases of cholera, which ended fatally. Pir Gora Chand's *mela* was held at Harwa in the Basirhat subdivision and Ghazi Saheb's *mela* at Bansra in the Sadar subdivision. The number of pilgrims attending them amounted to 90,000 and 25,000 respectively. Sanitary arrangements were made partly by the District Board and partly by the owners of the lands. The arrangements made in the latter fair were not satisfactory. The principal fairs held in Nadia were the *Ras Jatra* at Santipur, the *Dol Jatra* at Ghosepara, and the *Pat mela* at Kulia. The *Gan mela* held at Navadwipa may also be noticed as important. The number of persons attending these fairs aggregated 25,000, 50,000, 15,000 and 16,000 respectively. Sanitary and conservancy arrangements in these fairs were made either by the local municipalities or by the owners of lands in which the fairs were held. In the *Gan mela* at Navadwipa they were made by the Navadwipa Lodging-house Committee. There was no outbreak of cholera or other epidemic disease at any of the *melas* except one case of cholera at the Ghosepara *mela*, which was cured. The Municipal fairs in Murshidabad are the *Tulsi Bihar mela* at Raghunathganj and the *Kapileshwar mela* at Saktipur, each lasting for nearly a month, and the number of persons attending daily are 6,000 and 5,000 respectively. No fair of any importance was held at Jessore or Khulna.

FERRIES.

147. The following statement shows the income from ferries under Government, under the District Boards and municipalities in this Division for the past two years:—

DISTRICT.	Year.	Income from Government ferries.	Income from District Board ferries.	Income from Municipal ferries.	REMARKS.
1	2	3	4	5	6
		Rs.	Rs.	Rs.	
24-Parganas	1897-98	.....	20,224	3,489	
	1898-99	.....	21,590	3,531	
Nadia	1897-98	23,780	3,263	Nil.	
	1898-99	22,800	3,033	Nil.	
Murshidabad	1897-98	9,794	7,986	10,970	
	1898-99	9,244	8,195	8,436	
Jessore	1897-98	...	9,172	421	
	1898-99	...	7,860	212	
Khulna	1897-98	...	7,681	44	
	1898-99	...	8,661	44	
Total	1897-98	27,574	48,326	14,924	
	1898-99	26,044	49,369	12,223	

There has been a net increase of Rs. 1,043 in the income of ferries under the District Boards. The increase is shared by the 24-Parganas, Murshidabad and Khulna, while Nadia and Jessore show a decrease.

XXXVI.—CONDUCT OF ZAMINDARS.

152. As reported last year, none of the principal zamindars in the district of the 24-Parganas reside on their estates. They manage their estates through local agents who are generally not well disposed towards their tenants. The Collector, however, reports that the behaviour of the zamindars of his district during the year under report was on the whole good, and that no case of oppression was brought to his notice during the year. The principal resident zamindars of the district are the Mukerjis of Gobardanga, the Chaudhuris of Baruipur and the Mandals of Bawali. The Chaudhuris of Baruipur evince a keen interest in the welfare of their tenants. An unfortunate quarrel, which broke out between the brothers of the Gobardanga family, led to the institution of criminal proceedings under section 107 of the Criminal Procedure Code, but the Subdivisional Officer of Barasat succeeded in effecting an amicable settlement. Towards the end of the year, however, a bad riot took place in the Basirhat subdivision. Among the non-resident zamindars, the heirs of the late Babu Prosad Das Dutta, the Manager of the Shovabazar Raj Estate, Maharaja Benoy Krishna Deb Bahadur, Rai Manmatha Nath Mitter Bahadur and Maharaja Durga Charan Law treated their tenants well. The Dhankuria zamindars of Basirhat are reported to be model zamindars. They maintained a high English school, a Sanskrit *tol* and a dispensary entirely at their own cost and were always ready to subscribe to any works of public utility. In Nadia, excepting the Maharaja, there are very few landlords of any standing. Most of them are absentees or new men of comparatively low caste who, it is reported, think more of squeezing all they can out of their tenants than of improving their estates. The *utbandi* system, which is prevalent in most parts of the district, is a source of great oppression in the hands of such men. The Maharaja of Nadia is a mild landlord, generally kind and considerate towards his tenants. Minor acts of oppression committed by the local agents of zamindars are by no means rare, though it is difficult to establish the complicity of the zamindars in them by direct evidence. But, as the Collector reports, there can be no doubt that they are really responsible for such acts, as they must be perfectly well aware that the pittances they dole out to their servants are quite insufficient to support them, and that they are certain to supplement them by illegal exactions from the raiyats. In Murshidabad the Nawab Bahadur continues to keep up his reputation for liberality and loyalty towards Government. Notwithstanding the heavy expenditure incurred by him in repairing the damage done by the earthquake of June 1897 to the palace and other Nizamat buildings, he is always found ready to subscribe to deserving objects. The Maharaja of Kasimbazar, Manindra Chandra Nandi, who got his title in the year under report, is reported to be an intelligent landlord likely to maintain the traditions of the Raj by his already well known liberality. He is bearing the remaining cost of the Berhampore water-works. Rao Jogendra Narayan Rai of Lalgola is a rich and liberal zamindar who has given about Rs. 10,000 for a tank and a public hall in Jangipur, and is about to construct a landing ghat in Gorabazar. He keeps up a private dispensary. Raja Ashutosh Nath Ray, lately under the Court of Wards, has been made a Raja during the year. The Hon'ble Raja Ranajit Sing Bahadur of Nashipur is said to have rendered good service to Government as President of the Lalbag Bench during the early portion of the year under report. The other zamindars of the district who have been favourably mentioned are (1) the late Rai Makund Lal Burman Bahadur, (2) Rai Setal Chand Nahar Bahadur, (3) Rai Manilal Nahar Bahadur, (4) Babu Charu Krishna Majumdar of Islampur, (5) Rai Budh Sing Dudhuria of Azimganj, (6) Babu Dwarkanath Chaudhuri of Nimtila (Jangipur), (7) Munshi Ziilar Rahaman of Talibpur (Kandi), (8) Chaudhuri Keramatulla of Salar, (9) Munshi Mehdi Hossein of Sijgram and (10) Babu Bhagobati Charan Ray of Jangipur. Mr. Egerton reports that on the whole the attitude of the zamindars of Murshidabad is loyal towards Government and good towards their tenants. In Jessore the principal zamindars in the Sadar subdivision are (1) the members of the Chanchra Raj family and (2) the Ramnagar Ghosh Chaudhuris. No instance of oppression on their raiyats was brought to notice during the year. In Narail the principal zamindars are non-residents who manage their affairs through local agents, and the police and the Magistracy there have to be

on the alert to keep these agents from oppressing the raiyats. In Magura the principal zamindars are the Rajas of Dighapatia and Naldanga, the Narail Babus and Mr. Tweedie of Madhupur in Jhenida. To curtail expenditure the Raja of Dighapatia abolished a charitable dispensary at Bunagati which was doing good work. The Raja of Naldanga is said to take interest in the welfare of his tenants. He contributes liberally towards the maintenance of a charitable dispensary and a school, and gave a sum of Rs. 150 towards the construction of a public latrine in Magura town in the year under report. In the Jhenida subdivision the principal zamindars are the Narail Babus and the Raja of Naldanga. It is reported that cases of oppression by the agents of the Narail Babus occasionally come before the authorities and are suitably dealt with. From a memorial submitted to Government by some raiyats complaining against the malpractices and other acts of oppression of Bihari Lal Sarkar, the naib of the Narail Babus at Sabdalpur, it appears that the man has not been removed from their service though it was reported last year that the man had been removed. The Magistrate has been asked to report on this. In the Bongaon subdivision the principal zamindars are Babus Hari Charan Bose, Girija Prasanna Mukherji of Gobardanga, Kali Prasanna Ghosh of Calcutta, Jogendra Nath Maulik and Sir Maharaja Jatindra Mohan Tagore, Bahadur, K.C.S.I., of Calcutta, Babu Kumar Nath Ray of Krishnagar and Babus Radharaman and Kishori Mohan Shaha of Pabna. The relations between the raiyats and the landlords in the Jessore district were on the whole satisfactory during the year. The Magistrate speaks very highly of the services rendered by Mr. Shirreff on the Sinduria concern and of his acting manager. Mr. Macdonell, in assisting the Subdivisional Officer of Jhenida in settling and deciding disputes, the raiyats preferring to have their cases decided by Mr. Shirreff in his zamindari cutcherry rather than go to the trouble and expense of coming to subdivisional head-quarters. In Khulna almost all important zamindars are absentees, having local agents to manage their affairs. The Collector reports that these agents are on the whole law-abiding and none of them had any serious friction with the tenants. Of the resident zamindars the most important are (1) Rai Hari Charan Chaudhuri of Nakipur in the Satkhira subdivision, and (2) Srimati Kamal Kumari Chaudhurani in the Bagerhat subdivision. The former maintains a charitable dispensary, has recently come forward with a large donation for the Khulna charitable dispensary and is well spoken of: the latter is not favourably regarded. Of the non-resident zamindars, the Hon'ble Mr. Justice Chunder Madhab Ghose, who has zamindaris in the Satkhira subdivision, helped his tenants during the last scarcity and deserves mention.

XXXVII.—GENERAL REMARKS.

153. The year under report was not of an eventful or unusual character like the one which preceded it. Owing to a sufficient and well distributed rainfall, there was generally a bountiful harvest which enabled the people, in a large measure, to recover their lost position of comfort and prosperity. The general health of the public was satisfactory, and no disease appeared in any of the districts of this Division in an epidemic form, excepting in Jessore, where the public health suffered in the rains and early part of the cold season. The plague which reappeared in Calcutta in October last and which, it was feared, might break out in an epidemic form with all its virulence in the districts of this Division, happily did not appear in any of the districts excepting in the 24-Parganas and Nadia, where a few sporadic cases occurred.

**RESOLUTION ON THE REPORT OF THE BOARD OF REVENUE ON THE
LAND REVENUE ADMINISTRATION OF THE LOWER
PROVINCES FOR THE YEAR 1898-99.**

REVENUE DEPARTMENT—LAND REVENUE.

Calcutta, the 17th November 1899.

RESOLUTION—No. 4014 L.R.

READ—

The Report of the Board of Revenue on the Land Revenue Administration of the Lower Provinces for the year 1898-99.

The Report was submitted to Government with commendable punctuality on the 15th August.

COLLECTION OF LAND REVENUE.

2. *Financial results.*—The current demand on account of the land revenue in Bengal for the past five years is shown below :—

CLASS OF ESTATES.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
I.—Permanently-settled estates ...	3,22,61,893	3,22,82,525	3,23,02,286	3,23,03,784	3,23,19,810
II.—Temporarily-settled estates ...	28,21,520	28,36,046	28,94,880	29,17,553	31,65,981
III.—Estates held direct by Government.	34,84,498	35,25,890	35,55,897	36,96,820	39,02,484
Total ...	3,86,67,861	3,86,43,461	3,87,53,063	3,89,18,157	3,93,88,275

There was an increase in the total current demand of Rs. 4,70,118. The increase in class I was due to the transfer from class II of certain estates in Chittagong which have been declared not liable to re-assessment. That in class II was due almost entirely to the recent settlements in Orissa, and in class III to various petty revisions of rent roll, and to the increase in the *bhaoli* rents in Gaya.

3. The demands, collections, and balances of land revenue for the same period are shown in the following table :—

YEAR.	DEMANDS.			COLLECTIONS.			Remissions.	BALANCES.			Percentage of total collections (column 7) on total demand (column 2).	Percentage of total collections (column 7) on current demand (column 2).	Percentage of current collections (column 7) on current demand (column 2).
	Current.	Arrear.	Total.	Current.	Arrear.	Total.		Current.	Arrear.	Total.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.			
1894-95 ...	3,86,67,861	16,60,096	4,01,33,946	3,72,10,247	13,80,078	3,85,90,325	86,741	13,27,402	3,10,418	16,37,820	98.55	99.54	99.48
1895-96 ...	3,86,43,461	12,72,463	3,99,15,924	3,75,73,616	9,00,570	3,85,73,192	87,220	10,44,892	2,10,620	12,55,512	99.63	99.81	99.33
1896-97 ...	3,87,53,063	15,02,152	4,00,55,215	3,74,86,108	9,00,881	3,84,86,987	1,73,002	12,13,332	1,85,041	13,98,373	99.07	99.30	99.33
1897-98 ...	3,89,18,157	14,30,224	4,03,48,381	3,74,02,044	11,50,411	3,85,52,455	1,40,254	13,21,140	2,29,026	15,50,166	95.79	99.31	96.34
1898-99 ...	3,93,88,275	16,52,643	4,10,40,918	3,80,34,415	12,82,324	3,92,00,030	1,03,850	12,01,944	2,88,185	15,50,129	96.75	99.76	98.56

4. *Collections, balances, and remissions.*—The total demand increased by Rs. 6,92,537 in comparison with that of 1897-98, and the total collections by Rs. 6,47,584. The remissions, however, exceeded those of the previous year by Rs. 44,596, and so the total balance at the end of the year had only increased by Rs. 357. The percentage of arrear collections went down from 80.86 to 76.39, though absolutely they increased by a lakh. The total balance, arrear and current, outstanding at the close of the year represented a percentage of 3.77 on the total demand as compared with 3.84 in 1897-98. Of this, 94.9 per cent. was good and recoverable.

Of the total amount of land revenue remitted during the year no less than Rs. 1,89,793 related to estates held direct by Government. The remissions of grace, amounting to Rs. 1,32,264, were considerably higher than in the preceding year, when they had been granted to the extent of Rs. 18,580 only. They were sanctioned mostly in Chittagong (Rs. 1,22,346) on account of the serious damage done by the cyclone and storm-wave of the 24th October 1897. The remissions under this class in other districts were, as usual, allowed to tenants of Government estates on account of failure of crops and of the death, desertion, or poverty of the raiyats. The remissions of right amounted to Rs. 39,511 as against Rs. 1,20,452 during 1897-98, and were chiefly due to diluvion, release of estates to private zamindars, and acquisition of land for public purposes. The nominal remissions rose from Rs. 10,222 to Rs. 22,075, of which Rs. 15,095 were in Backergunge alone.

5. *Permanently-settled estates.*—Out of a total demand, current and arrear, from estates in class I of Rs. 3,27,89,770, the sum of Rs. 3,24,08,541 was realised. The percentage of the collections on the demand, after excluding from the demand sums the recovery of which was in suspense, and adding to the collections sums realised but not credited during the year, amounted to 99·21 per cent. as against 99·11 in the preceding year and 99·21 in 1896-97. The current collections fell short of the standard of 99 per cent. in 14 districts, of which 6, however, collected more than 98 per cent. The districts which collected less than 98 per cent. of the current demand were Jessore, Noakhali, Palamau, Ranchi, Muzaffarpur, Manbhum, Chittagong, and Darjeeling. In Darjeeling, excluding a demand of Rs. 474, the true balance was nil. In Jessore Rs. 13,732 were due from the Sridharpur Ward's Estate for the last two kists of the year, owing to a temporary stoppage of collections during change of management. A sum of Rs. 2,455 was recovered shortly after the close of the year. In Noakhali a sum of Rs. 11,107, out of the total balance of Rs. 11,169, was due from Chakla Bamni, which has been purchased on behalf of Government but has not yet been settled. In Palamau and Ranchi the balances were less than Rs. 1,000. Of Rs. 29,115 due in Muzaffarpur, Rs. 5,869 were paid during the year, but could not be brought to credit before its close, and Rs. 15,464 were on account of the last kist of the year, for which no coercive measure could be taken within the year. In Manbhum the entire balance of Rs. 3,165 was due from the Patkum Encumbered Estate. In Chittagong the balance of Rs. 38,698 was due to the effects of the cyclone and storm-wave of October 1897.

The realisation of the arrear balances was less than 99 per cent. in 17 districts. In four of these the collections exceeded 98 per cent., and in six the arrears were trifling. Out of the total arrear balances of Rs. 46,199, no less than Rs. 33,788 is outstanding in the Patna Division, the largest defaulter being, as last year, the district of Shahabad (Rs. 27,442). It is explained that much of this amount is under recovery by the Certificate Procedure, because, when the estates were offered for sale in some instances there were no offers or but very low ones. This explanation is not understood, and a special report on the subject will be called for. Balances of over Rs. 1,000 were also due in the districts of Noakhali, Saran, Muzaffarpur, Darbhanga, Malda, and Manbhum.

Collections, generally, both of the current revenue and the arrear balances, were excellent.

The total amount of land revenue remaining due from wards' estates at the close of the year was Rs. 56,652, a sum more than double that of last year. The balances in Jessore and Backergunge were due from the Sridharpur estate owing to the circumstances stated above. In Burdwan, Rs. 11,472 were due from estates belonging to the Burdwan Raj, and will be adjusted against the surplus payment made by the Raj for other estates. These arrears were detected during the enquiry into the Burdwan tauzi frauds. Rupees 9,770, out of the total balance of Rs. 9,776 in Shahabad, was due from the Mahula estate, the reason assigned for its failure to pay being lack of funds. The explanation can scarcely be accepted as a final one, seeing that a similar default has occurred in each of the two preceding years and steps must now be taken to prevent a recurrence. In Chittagong, Rs. 7,213 are due from three

Wards' estates which incurred serious loss in the cyclone and storm-wave of October 1897. In Saran steps are being taken by the Collector to open separate accounts in all estates in which the Wards hold shares. In Muzaffarpur, of Rs. 4,186 due, Rs. 3,364 were paid up within the year, but not credited before its close. In Patna, the delay in the payment of the balance (Rs. 2,206) was due to the sudden death of the General Manager.

6. *Temporarily-settled-estates.*—The total demand, current and arrear, from temporarily-settled estates amounted to Rs. 34,93,772 as against Rs. 31,99,444 during the previous year, and the total collections to Rs. 31,55,544 in comparison with Rs. 28,78,277 in 1897-98. The percentage of total collections on the total demand was 90·31 as against 89·96 in the previous year and 91·08 during 1896-97. The results of collections in each subdivision of this class during the year under report, as well as for the preceding year, are given below :—

CLASSIFICATION OF ESTATES.	Year.	Percentage of current collections on current demand.	Percentage of arrear collections on arrear demand.	Percentage of total collections on total demand.
1	2	3	4	5
II. (a)				
Settled for periods with proprietors ... {	1897-98	92·35	96·59	92·59
	1898-99	93·01	91·82	92·92
II. (b)				
Private estates leased to farmers for periods. {	1897-98	84·81	84·09	84·70
	1898-99	84·47	86·43	84·74
II. (c)				
Government estates leased to farmers for periods. {	1897-98	83·53	76·52	82·29
	1898-99	84·09	70·09	81·62
Total ... {	1897-98	90·29	86·56	89·96
	1898-99	91·07	83·07	90·31

The percentage of collections shows a slight improvement in classes II (a) and (b), and a falling off in class II (c), the general result being somewhat better than that of the previous year. The Lieutenant-Governor regrets that he cannot speak of the collections in temporarily-settled estates in the terms he has used about the permanently-settled districts. For a year of good harvests the collections were distinctly bad. Had the deficits occurred in the newly-assessed areas in Orissa, there might have been some excuse, but the worst occur in districts where there is practically no explanation, except the laxness of the collecting officers. If an assessment is unfair, it ought to be revised; but so long as its fairness is not impugned, its payment in ordinary seasons must be required with precisely the same punctuality as is properly insisted upon in all other business matters. In compliance with the orders issued by Government last year, the Board have submitted separately a report as to the best means of improving collections in Government and private estates leased to farmers, and orders have now been passed by Government, which will, it is hoped, effect an improvement.

In the last two Resolutions, Burdwan, Dacca, Hooghly, and Faridpur were referred to for failing to collect 50 per cent. of the current demand in private estates leased to farmers. The two former have dropped out of this year's list, but Midnapore has been added.

The current collections in the districts of Bankura, Muzaffarpur, Darbhanga, and Bhagalpur in the case of Government estates let out in farm also fell short of 50 per cent. The standard of 95 per cent. fixed for current collections in temporarily-settled estates of all classes, was reached or exceeded in 17 districts only, of which 4, namely, Birbhum, Chittagong, the Sonthal Parganas, and Manbhum, realised their demands in full. Of the large balance of Rs. 99,295 in Puri, Rs. 98,329 are due from the Kotdesh Estate which will be taken under direct management, the proprietor having refused settlement. In Midnapore, Khulna, Backergunge, and Shahabad the outstanding balances are also large, as in the previous year. The collection of arrears was specially poor in the case of Government estates leased to farmers in the district of Shahabad (11·19), of private estates similarly held in Gaya (19·44), and of estates settled for periods with proprietors in Dacca (33·78).

7. *Estates held direct by Government.*—During the year under report there were altogether 2,817 estates held direct by Government, of which 2,578 were owned by Government as proprietor and 239 were private estates under Government management. The current demand increased from Rs. 36,96,820 to Rs. 39,02,484 and the total demand from Rs. 45,29,909 to Rs. 47,57,376, out of which Rs. 37,32,854, or 78·46 per cent., were collected and Rs. 1,89,793 remitted, leaving an unrealised balance of Rs. 8,34,729, or Rs. 25,499 less than in the previous year.

The general results are compared below with those of the previous year in each subdivision of this class :—

CLASSIFICATION OF ESTATES.	Year.	Percentage of current collections on current demand.	Percentage of arrear collections on arrear demand.	Percentage of total collections on total demand.
1	2	3	4	5
(a)				
Managed for proprietors ... {	1897-98	80·45	82·02	80·77
	1898-99	89·62	77·84	88·01
(b)				
Owned by Government as proprietor ... {	1897-98	79·19	76·26	78·66
	1898-99	79·83	65·11	77·09
Total ... {	1897-98	79·37	77·15	78·96
	1898-99	81·12	66·32	78·46

The percentage of current collections on the current demand increased and that of arrear collections on arrear demand decreased under both headings, the net result being that the percentage of total collections on the total demand fell from 78·96 in the previous year to 78·46 in the year under report. The standard of 90 per cent. for current collections in both classes was reached or exceeded in 18 districts as compared with 14 in 1897-98, while in four other districts as compared with one in the previous year it was exceeded in one class of estates only.

The results were very poor in Patna, where the percentages of current collections on the current demand were only 19·17 in the case of estates managed for proprietors and 65·46 in that of Government estates though explanations of these shortcomings are not given. In Jalpaiguri, the Lieutenant-Governor has again to notice the existence of very heavy arrears, which amounted to Rs. 1,63,625, the percentage of current collections on current demand having also fallen off from 62·96 to 56·31. It is, however, observed that the arrear collections were satisfactory. With a view to improve collections, the Lieutenant-Governor has recently approved the Board's proposals that, in case of default, the jotes of middlemen who pay more than Rs. 20 as rental should be subjected to sale under Act VII (B.C.) of 1868, and that the certificate procedure should be used for the recovery of arrears only in the case of actual cultivators paying Rs. 20 or less. He is, however, disposed to agree with the Commissioner that the short collections are due, in essence, to bad management. The system of officering these estates appears to be radically defective, and, in consultation with the Commissioner, an alteration of it is now being arranged. In Balasore and Palamau, which had been unfavourably noticed in the last two years, collections still continued to be poor, and the Lieutenant-Governor is disappointed to find that the Board of Revenue have ascertained and given no reasons whatever for the failure. From another source, it is gathered that in Palamau the supervision exercised by the tahsildar was lax. In both districts the Board are requested to see that decided improvement is made in the current year. In Chittagong, out of a total current demand of Rs. 5,35,446, Rs. 1,50,701 remained unrealised in consequence of the cyclone and storm-wave of October 1897. Arrear collections were worst in the districts of Midnapore, Dacca, Backergunge, Chittagong, Shahabad, Monghyr, Bhagalpur, and Puri, and the Board will doubtless give their special attention to the progress of recoveries in these districts.

8. *Miscellaneous Revenue.*—Out of the total collections under the head of Miscellaneous Revenue, nearly three-fourths, amounting to Rs. 7,58,776, were on account of the large recoveries of survey and settlement charges, principally in the districts of Muzaffarpur, Champaran, and Saran. The Board have satisfactorily explained the balance which remained at the close of the year.

9. *Sale of Government lands.*—During the year under report, 42 petty Government estates with an area of 441 acres were sold subject to a revenue fixed in perpetuity of Rs. 1,190. The price realised was Rs. 3,987.

10. *Particulars of estates held direct.*—Particulars of estates held direct by Government, classified by Divisions, and showing the demands, cost of management, and total collections during the year are given below:—

DIVISION.	GOVERNMENT ESTATES.		PRIVATE ESTATES.		TOTAL.		Cost of management.	Percentage of cost on current demand.	Current collections.	Percentage of current collections on current demand.
	Number.	Current demand.	Number.	Current demand.	Number.	Current demand.				
1	2	3	4	5	6	7	8	9	10	11
		Rs.		Rs.		Rs.	Rs.		Rs.	
Burdwan	310	66,296	7	2,88,488	317	2,01,724	22,059	7·3	2,74,494	90·90
Presidency	218	3,55,917	42	13,731	266	3,69,648	18,938	5·04	3,17,930	86·09
Rajahmahi	72	5,74,410	33	13,687	105	5,88,100	42,869	7·2	4,93,027	83·82
Dacca	685	4,14,339	101	1,10,054	786	5,24,393	28,320	5·3	4,80,595	90·00
Chittagong	243	7,39,877	29	17,052	272	7,47,929	65,163	8·7	5,07,188	67·74
Patna	214	2,36,179	17	24,114	231	2,60,293	29,131	11·1	1,04,300	74·68
Bhagalpur	125	2,04,071	5	15,056	130	2,09,727	7,714	3·4	2,07,053	98·68
Orissa	705	4,76,752	5	74,397	710	5,51,149	21,079	3·8	5,23,051	95·06
Chota Nagpur	11	2,39,615	.....	.....	11	2,39,615	10,426	4·3	1,06,001	81·79
Total	2,578	33,68,465	239	5,14,029	2,817	38,82,494	2,43,414	6·3	31,05,628	81·72
Total in 1897-98	2,486	31,56,929	244	5,09,691	2,730	36,66,620	2,42,608	6·5	29,34,140	79·37

In seven districts, namely, Birbhum, Bogra, Pabna, Tippera, Noakhali, Gaya, and Shahabad, as against 11 in the previous year, the cost of management exceeded 10 per cent. on the current demand, the standard aimed at being 6 per cent.

11. *Road and Public Works Cesses.*—The following table shows the demands, collections, remissions, and balances on account of the road and public works cesses during the year under report, as compared with the figures for the two preceding years:—

YEAR.	NET DEMAND AFTER EXCLUDING REDUCTIONS AND REMISSIONS.			Collections (including advance collections).	Percentage of collections on current demand.	Balances.	Percentage of balances on gross demand.	Remissions.
	Current.	Arrear.	Total.					
1	2	3	4	5	6	7	8	9
	Rs.	Rs.	Rs.	Rs.		Rs.		Rs.
1896-97	86,61,682	17,24,415	1,03,86,097	86,16,072	99.4	17,91,576	17.2	63,24.8
1897-98	89,66,309	17,82,378	1,07,38,687	88,71,693	99.0	18,75,440	17.4	81,813
1898-99	90,38,860	18,60,441	1,08,99,321	90,06,445	99.6	19,07,444	17.6	56,005

The increase in the current demand is due mainly to the partial revaluations of the districts of Mymensingh, Backergunge, Tippera, Rangpur, Dinajpur, Rajshahi, and Manbhum, and by the increased assessment of coal mines in the district of Burdwan. Both the cesses were levied at the maximum rate of one anna in the rupee in the 43 districts in which Act IX (B.C.) of 1880 is in force: 99.6 per cent. of the current demand was realised during the year under report as against 99 in the previous year. In 27 districts the current collections were below 90 per cent. on the current demand, and in 12 districts the proportion of arrear collections to the demand was below 80 per cent. The aggregate collections were higher in amount than in any preceding year, and the percentage of collections on the current demand was also higher than in 1897-98.

12. *Remittance of land revenue and rent by means of money-orders.*—There was an increase in the number of money-orders issued for the payment of revenue and cess from 193,011 to 198,746, and in the amount covered by them, from Rs. 18,06,483 to Rs. 18,29,360. The system continues to be popular among owners of petty estates, but the owners of large estates prefer to make payments through their agents. The largest numbers of orders as in last year were sent in the districts of Chittagong, Hooghly, Faridpur, and Dacca.

The following table gives the available statistics of the working of the system of payment of rent by money-orders during the last five years:—

YEAR.	Number of money-orders issued for rent.	Amount.	Number of such orders refused.	Amount.
1	2	3	4	5
		Rs.		Rs.
1894-95	40,834	5,87,371	13,772	1,45,695
1895-96	43,708	6,20,097	14,503	1,59,890
1896-97	50,483*	7,40,526*	14,070*	1,73,724*
1897-98	51,865*	7,12,973*	11,295*	1,42,116*
1898-99	50,484	7,67,913	10,137	1,23,952

* These are the corrected figures.

It is reported that usually the system is resorted to only when there is bad feeling between the landlord and his tenants, and the Lieutenant-Governor does not conceal his regret that the system is spreading.

13. *Operation of the sale laws.*—The working of the sale laws during the last five years is shown below :—

YEAR.	Number of estates and shares and interests liable to sale.	SOLD.				Percentage of column 6 on column 2.	Revenue demand of estates sold.	Amount of defaults.	Amount realised by sale.
		Estates.	Shares.	Interests.	Total.				
1	2	3	4	5	6	7	8	9	10
1894-95	16,276	950	516	.....	1,466	9.6	Rs. 1,49,872	Rs. 72,724	11,11,334
1895-96	16,237	906	689	3	1,607	9.2	2,03,232	2,34,631	12,85,081
1896-97	20,372	1,114	432	1	1,607	7.9	2,00,050	55,003	9,89,406
1897-98	20,977	1,109	536	.....	1,645	7.8	1,80,477	78,408	10,75,924
1898-99	21,433	1,070	720	.....	1,790	8.3	1,94,228	76,741	10,83,324

The number of estates sold (1,070) represents only about .06 per cent. of the total number of estates in Bengal (1,81,095). The prices realised by sale rose from 6.07 to 8.6 times the revenue demand on the properties sold. Out of 443 appeals preferred to the Commissioner against sales, 68 were successful, and recommendations for the annulment of the sales were made to Government in 18 cases on the ground of hardship.

Defaults were most numerous in Shahabad (5,292), Saran (1,862), Chittagong (1,705), Cuttack (1,692), Muzaffarpur (1,351), Darbhanga 1,069), and Mymensingh (1,009). In Shahabad, as in the preceding two years, the sale law appears to have been worked with undue leniency, and though, as compared with 1897-98, there was a decrease in the number of defaults and an increase in the number of sales, yet 36.8 per cent. of the total number of estates and shares on the revenue-roll in this district defaulted, and the proportion of sales to defaults was still as low as 8 per cent. The land revenue collections of this district are as follows :—

Class	I	...	...	...	Current.	Arrears.
"	II(a)	...	...	...	98.14	69.1
"	II(b)	...	...	...	95.45	92.01
"	III	...	...	...	79.51	11.19
"	III	...	...	...	80.55	47.31

Only in class II (a) (current) was the Board's standard reached; and, in the absence of explanations, this cannot but be considered very unsatisfactory. The Lieutenant-Governor desires the Board to insist, in the absence of special circumstances, on the adoption of a stricter observance of the sale law in future in Shahabad, Saran, and Muzaffarpur.

There were excessive delays in holding sales for arrears of each kist in Chittagong, Patna, and Puri. The Lieutenant-Governor is glad to find that the Board have in their Circular No. 2 of March 1899, issued orders with a view to improve the observance of the rules relating to the dates of holding sales.

In order to check frauds in the tauzi departments of Collectorates, the Government is now considering a proposal to entertain, under the supervision and control of the Accountant-General, Bengal, a small establishment, to be deputed by the Board, without previous notice, to audit the accounts of those districts in which heavy balances of land revenue are reported.

14. *Working of the Public Demands Recovery Act 1 (B.C.) of 1895.*—The following statement shows the number of certificate cases instituted and disposed of during the year under the different classes of public demands :—

CLASSIFICATION OF DEMAND.	Number pending from last year.	Number filed during the year.	Total.	Disposed of during the year.	PENDING—		
					More than six months.	Less than six months.	Total.
1	2	3	4	5	6	7	8
I. Demands of all kinds under section 3 ...	410	1,520	1,930	1,430	125	572	697
II. Arrears of rent due to Government, clause (g), section 7 (1) ...	7,123	23,617	30,740	31,379	1,359	6,917	8,276
III. Embankment dues, section 70, Act II (B.C.) of 1882 ...	2,544	5,779	8,323	5,737	663	1,931	2,596
IV. Water-rates, Act III (B.C.) of 1876 ...	73	1,477	1,550	1,400	3	72	75
V. Ceases, Act IX (B.C.) of 1880 ...	44,673	123,807	1,70,480	113,537	14,616	42,333	56,949
VI. Demands of the Court of Wards, clause (h), section 7 (2) ...	3,948	7,199	11,147	6,890	9,101	2,156	4,257
VII. All other demands under section 7 (1) ...	13,190	37,036	50,226	33,999	3,742	12,445	16,237
Total ... { 1898-99 ...	71,581	211,341	2,83,322	104,451	22,403	66,208	88,671
... { 1897-98 ...	78,808	172,900	2,51,608	179,505	22,145	49,800	71,945
... { 1896-97 ...	60,302	174,672	235,674	165,065	21,004	57,835	78,839

NOTE.—The number of cases shown in column 2 as pending from the previous year does not correspond with that in column of that year's report, owing to alterations found necessary since the submission of that report.

There was a net increase of 38,541 in the number of certificates filed. The increase is shared by all classes, except III and IV, and is most marked in class V, "Cesses," class VII, "All other demands," and class II, "Arrears of rent due to Government," being 24, 144, 7,415, and 6,855 respectively. The increase under class V, which is shared by all Divisions except Rajshahi and Bhagalpur, and the increase in class II, are said to be due largely to better supervision and partly to greater strictness in enforcing demands after the effects of the famine had passed away. The Board remark that the order sanctioning the entertainment by Collectors of extra establishment on a sliding scale for the Certificate Department, which was given effect to from the 1st April 1898, largely contributed to the increase in the number of certificates issued. The increase under class VII is due to the issue of certificates for the recovery of fines under the Land Registration Act, of advances under the Land Improvement and Agriculturists' Loans Act, and of costs of partition and survey and settlement. The proportion of certificates disposed of to the total number for disposal decreased from 71·3 per cent. in the previous year to 68·6 per cent. The number of certificates filed for the realisation of water-rates shows a steady and satisfactory decline from year to year. The proportion of cases disposed of was highest in the Orissa Division and lowest in that of Burdwan. In the Resolutions of the two preceding years, the unsatisfactory state of the certificate work in the Burdwan Division was noticed, and unless a very marked change for the better takes place in all the certificate offices of this Division during the current year, the Board are desired to submit in July next a report showing what measures they would propose to ensure the long-needed improvement. During the year under review the disposals fell short of the institutions in all the districts of this Division, although the percentage of cases pending over six months decreased from 59·5 to 39·9, and the number of disposals increased in Birbhum, Bankura, and Hooghly. Compared with the total number of cases for disposal, the number pending over six months at the end of the year were in Hooghly 21 per cent., in Burdwan nearly 23 per cent., and in Bankura not quite 27 per cent., figures regarding which any comment would be superfluous. It is noted that the corresponding figures for Muzaffarpur are 13 per cent. and for Saran 15·6 per cent. which are not satisfactory.

15. *Compulsory measures for realisation.*—Of the cases in which the demand was realised, 29·8 per cent. were disposed of on issue of notice, 51·3 per cent. after attachment of property, and 3·2 per cent. after actual sale; the corresponding figures in the previous year were 29·2, 50·6, and 2·8 per cent. In Chittagong post-card notices were issued without much effect. The number of persons imprisoned for non-payment of public demands increased from 22 to 52, of whom 37 were released without payment of the debt.

In the Resolution on last year's report, the Board were asked to enquire and report on the working of section 21 of the Public Demands Recovery Act; and the opinions of the various District Officers and of the Board are now before Government. The conflict of views is pronounced, but the Lieutenant-Governor is disposed to agree with the Board that the section as it stands is a source of weakness, and should be amended. Before, however, taking action in that direction, His Honour will ask for the Board's opinion as to what measures are necessary for the purpose of improving the present state of road-cess collections. There is manifestly something seriously wrong when, in one year, in a district protected by natural advantages from the vicissitudes of the seasons, there are as many as 17,000 certificates in existence for the recovery of a cess, the incidence of which has been familiar now for many years; and His Honour emphatically refuses to acknowledge such a state of things as due to anything else than deliberate dilatoriness on the part of the persons from whom the tax is due. It is impossible to believe that so many landlords of that district are unable to pay the sums due; and one perfectly legitimate inference is that the methods which the law now puts at the disposal of District Officers for the realisation of the cess are, so far as ensuring promptness, insufficient, and require consideration as to the changes needed.

ADMINISTRATION OF LAND REVENUE.

16. *Management of Government estates.*—The grant at the disposal of the Board, calculated at the rate of 9½ per cent. on the collections for the

management of Government estates during the year, and for miscellaneous and sanitary improvements in connection with them, amounted to Rs. 4,94,000: the expenditure incurred is shown below:—

	Allotment, 1898-99.	Expenditure, 1898-99.	Allotment, 1897-98.	Expenditure, 1897-98.
1	2	3	4	5
Grant of—	Rs.	Rs.	Rs.	Rs.
(a) Management proper ...	4,94,000	(a) 2,45,414	4,71,579	(a) 2,42,664
(b) Sanitary improvements...		(b) 1,11,273		(b) 60,316
(c) Miscellaneous and agricultural improvements.		(c) 75,238		(c) 1,38,089
Total ...	4,94,000	4,31,925	4,71,579	4,41,069

Out of a total allotment of Rs. 2,13,267 made by the Board under the last two heads, the amount expended was Rs. 1,86,511 only, leaving a saving of Rs. 26,756. The largest savings were in the Rajshahi Division (Rs. 9,583), the Patna Division (Rs. 5,154), the Chittagong Division (Rs. 3,530), and the Bhagalpur Division (Rs. 2,667).

In the two preceding years the Lieutenant-Governor had occasion to notice the failure to make a full use of the funds available for improvements on these properties, and in the Resolution of last year the Board were requested to submit a special report explaining the difficulties experienced in giving effect to the wishes of Government in this matter. In their present report the Board have furnished explanations in regard to each Division, and they recommend for general adoption the proposal of the Commissioner of Rajshahi that a programme should be made of the agricultural and sanitary improvements necessary in each district during a series of years. The Lieutenant-Governor accepts this very obvious and proper recommendation, and desires that a programme of works for each district may be prepared every five years under the directions of the Board. The programmes for the five years 1900-1901 to 1904-1905 should be drawn up and settled during the coming cold weather camping season. The Board also point out that the end of the official year comes just at the time when wells should be sunk and tanks dug or re-excavated, and they suggest that sums allotted should lapse after the 30th June, instead of after the 31st March, but considerations of accounts prevent, the Lieutenant-Governor is informed, the acceptance of this suggestion. The grant of 1 per cent. on collections made over to the Director of Public Instruction for educational purposes in connection with Government estates amounted to Rs. 57,980, but the amount actually spent was Rs. 62,023, the excess expenditure being paid by the District Boards and from other sources. The 1½ per cent. grant on roads and communications amounted to Rs. 56,188. In the Resolution of last year, it was observed that although separate accounts in respect of this grant are not kept, there should be no difficulty in ascertaining what roads in connection with Government estates are maintained by the District Board and what sums were spent upon them during any particular year, and the Board were accordingly desired to furnish further details in future. In their present report the Board have furnished detailed information to the extent possible; but they do not think that the District Boards should be required to consider the exact situation of khas mahal estates in deciding what roads should be made or repaired, views, in which the Lieutenant-Governor concurs. The special allotment for agricultural and sanitary improvements, amounting to 3 per cent. on collections, yielded Rs. 1,17,473; the expenditure amounting to Rs. 1,26,628. The subject of introducing new staples and improved agricultural machinery will be dealt with in the Resolution on the report of the Director of Land Records and Agriculture, Bengal.

17. *Inspection of accounts.*—The usual inspections were made of the registers and accounts of the Government estates, but no material irregularities were brought to light. The revised rules of management issued by the Board

in their Circular No 8 of January 1897 appear to have worked well, and to have been generally observed.

18. *Condition of the raiyats.*—The condition of the raiyats on the Government Estates improved with the generally good crops of the seasons subsequent to the famine. Local causes injuriously affected them in Midnapore; and the effects of the cyclone have not entirely disappeared from Chittagong.

19. *Survey and settlements.*—The survey and settlement work in the Province generally has as usual been separately reviewed in detail for the year ending 30th September 1898 in Government Resolution No. 1315, dated 28th March 1899.

In Government and temporarily-settled estates 118 original settlements, 4,162 resettlements, and 220 summary settlements were completed during the year, with a net increase of revenue, amounting to Rs. 4,77,676, due chiefly to the Orissa settlements.

In the usual forecast of increases of revenue expected from revision of settlements and other causes for the six years ending 1902-1903, a total increase of Rs. 6,55,644 was anticipated in the demand of the year under review. The causes of this difference are explained by the Board, the principal reasons being—

- in place of Rs. 4,42,500, the estimated increase in the revenue of the temporarily-settled estates in Orissa, a minimum increase in the revenue of about Rs. 3,50,000 was obtained; and
- in Chittagong the revision of the rent-rolls yielded an increase of Rs. 17,519 less than the forecast;
- failure to complete the year's programme.

20. *Land Registration.*—The following statement shows the total number of interests registered under initial registration in each division from the commencement of the operations, the number of interests registered under section 42 up to the end of the previous year since the completion of land registration proceedings, and the percentage of the number of interests registered during the year on the total number of interests registered up to the end of the previous year:—

DIVISION.	Total number of interests registered under initial registration (section 43). This number should be the same in each return.	Total number of interests registered under section 42 up to the end of last year since completion of land registration proceedings.	Total of columns 2 and 3.	NUMBER OF APPLICATIONS UNDER SECTION 42 FILED DURING THE YEAR.			Number of interests registered.	Percentage of column 8 on column 4.
				(a) On account of succession by inheritance, whether under will or otherwise.	(b) On account of succession by purchase, gift, or otherwise.	(c) Total.		
1	2	3	4	5	6	7	8	9
Burdwan	50,066	42,330	92,396	2,509	1,909	4,418	3,493	3.7
Presidency	66,064	56,561	1,22,625	1,750	1,336	3,086	2,305	1.9
Rajshahi	37,015	30,173	67,188	1,511	806	2,317	2,219	3.3
Dacca	39,331	1,39,094	2,24,745	4,639	5,084	9,723	9,084	4.0
Chittagong	1,84,840	2,09,145	3,93,985	2,137	4,674	6,811	2,825	1.1
Patna	2,67,648	2,96,185	5,63,833	11,145	13,254	24,399	20,969	3.5
Bhagalpur	1,00,940	60,319	1,61,259	2,011	1,409	3,420	4,206	2.7
Orissa	1,60,063	63,660	2,23,723	2,630	4,618	7,248	5,406	2.7
Chota Nagpur	5,872	1,938	7,810	20	216	236	229	3.9
Total	9,69,030	5,97,435	15,66,465	20,402	24,703	45,105	37,976	3.0

There was a decrease of 1,327 in the number of applications for mutations filed; and in the number of cases disposed of a decrease of 3,618. This reluctance of new proprietors to register their names, is not a gratifying feature in the report. The re-writing of Register D of intermediate mutations has now been completed in 33 districts.

21. *Partitions.*—On the passing of Act V (B. C.) of 1897, which came into force on 8th December 1897, revised rules and instructions were issued for the guidance of officers employed on the partition of estates, in superseesation

of those issued under the old Act VIII (B. C.) of 1876. Partition work is of very great importance in the three Divisions of Patna, Bhagalpur and Dacca, and the statistics of the cases instituted and disposed of there are given below:—

Division.	Pending at close of—		Instituted during—		Total for disposal during the year—		Disposed of during—		Pending at the close of—
	1890-97.	1897-98.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1898-99.
1	2	3	4	5	6	7	8	9	10
Patna	909	917	287	175	1,296	1,072	349	259	633
Bhagalpur	124	126	56	32	180	158	54	35	123
Dacca	476	496	137	31	613	457	197	116	341

The number of cases instituted decreased in the Patna Division by 92, in Bhagalpur Division by 24, and in the Dacca Division by 106. The disposals showed also a falling off in each of the three Divisions. The large decrease in the Patna Division is stated to be mainly due to settlement proceedings, for when a district is undergoing survey and settlement new batwara cases are not taken up till the record-of-rights is completed. In Monghyr the decrease in disposals is attributed to the fact that in preceding years delivery of possession of separate estates under section 123 of Act VIII (B.C.) of 1876 used to be made on the expiry of 60 days after confirmation of the partition by the Commissioner; while during the year under report, delivery of possession has, in accordance with the Board's Circular Order No. 5 of February 1898, been refused until after recovery in full of partition-fees and stamp duty. No less than 157 applications were struck off under section 11 of the Act. The audit of the Monghyr Batwara accounts was completed during the year, and from the scrutiny of this and several other district Batwara accounts, the Board have concluded that general professional audit is not necessary.

The average cost per acre of partitions completed during the year varied from Rs. 2-1-10³/₄ in Malda to Re. 0-2-2 in Bhagalpur; and explanations of the variations noticed in the different districts have been furnished. The lowness of the charge in Bhagalpur was due to the partition work being mostly based on settlement papers. The cost of a partition, and the time occupied in completing it, are very much in the hands of the parties; still, in the absence of any special reason, the Lieutenant-Governor cannot but regard the protraction of proceedings over twelve and fifteen years, as in Monghyr and Shahabad, as a sign of weak administration. It is presumed that the Board inform themselves in regard to cases of this sort, and issue orders to ensure their acceleration.

22. *Land Acquisition.*—During the year the Board confirmed the proceedings connected with the acquisition of 3,080 acres at a cost of nearly six lakhs. The details appear from the list below:—

Purpose for which land was taken up.		Area of land taken.	Revenue abated.	Cash compensation paid, including other charges.
1		2	3	4
		Acres.	Rs.	Rs.
Government		516	170	64,725
Irrigation		1,211	257	79,104
Municipalities		80	84	1,79,601
Railways		986	270	2,00,711
District Boards		287	111	74,038
Total		3,080	892	5,98,178

The average cost per acre amounted to Rs. 194, or omitting costly projects, to Rs. 125. The corresponding figures of the previous year were Rs. 164 and Rs. 129. The most important railway projects in progress at the end of the year are the Sultanpur-Bogra-Kaliganj and the Rajbari-Faridpur extensions of the Eastern Bengal State Railway; extensions of the Bengal-Duars Railway in Jalpaiguri and Rangpur, and the Santarabari extension of the Cooch Behar State Railway; the Mymensingh-Jagannathganj Railway; the Jharria Branch, the Howrah-Santragachhi Section and the Shalimar Branch of the Bengal-Nagpur Railway; the South Bihar and Mogulsarai-Gaya Railways; the Segouli-Raxaul, the Bettiah-Bagaha, the Hajipur-Katihar, and Sakri-Jainagar extensions of the Tirhut State Railway; and the quadrupling of the Eastern Bengal State Railway line from Ballygunge to Naihati. Important projects for the improvement of the town of Calcutta were in progress, 340 acres being taken up, for which Rs. 6,33,189 was paid as compensation for the land and buildings thereon, or Rs. 1,862 per acre. These proceedings were not, however, confirmed in the year under report.

23. *Kunungos and Patwaris.*—The reorganization of the patwaris in Orissa, and in the Pataspur temporarily-settled estates in Midnapore for the purpose of maintaining records of the present settlement is still under consideration.

24. *Advances under the Land Improvement Loans Act.*—Out of a total amount of Rs. 1,88,800 applied for by the Collectors for advances under the Land Improvement Loans Act, XIX of 1883, the sum of Rs. 1,16,722 was allotted for distribution, of which Rs. 35,268 was actually disbursed, as against Rs. 3,58,510 in the preceding year. The marked decrease is due to the large advances made during the famine, and to the favourable crops of the year.

The progress made in the realization of outstanding advances is shown below:—

Outstanding advances.	Demand (principal <i>plus</i> interest) during the year.	Collections (principal <i>plus</i> interest) during the year.	Percentage of collections on demand.	Remissions.	Balance at the close of the year.
1	2	3	4	5	6
Rs. 7,60,662	Rs. 2,20,626	Rs. 1,77,132	80.2	Rs. 11,418	Rs. 42,489

Of the sums advanced in the districts of Saran, Champaran, Muzaffarpur and Darbhanga in 1896-97 and 1897-98 under the modified rules for famine conditions, amounts aggregating Rs. 33,431 became realizable during the year under report, but only Rs. 11,429 were collected. This result is scarcely satisfactory, as presumably according to the rules each recipient is solvent and has given to the Government ample security for repayment.

25. *Advances under the Agriculturists' Loans Act.*—A total sum of Rs. 26,403 was advanced under the Agriculturists' Loans Act.

The demands, collections and balances on account of advances under this Act during the year are shown below:—

Outstanding advances.	Demand (principal <i>plus</i> interest) falling due during the year.	Collections (principal <i>plus</i> interest) during the year.	Percentage of collections on demand.	Remissions.	Balance at the close of the year.
1	2	3	4	5	6
Rs. 12,10,337	Rs. 7,66,606	Rs. 5,46,932	71.3	Rs. 2,458	Rs. 2,17,024

Of the balances outstanding at the close of the year, the Patna and Chota Nagpur Divisions are responsible for Rs. 1,18,351 (or 54.5 per cent.) and Rs. 65,828, respectively. It is desired that the recovery of these advances should be carefully enforced, due regard being had to the outturn of the season's crops. Their non-recovery not only involves actual loss to Govern-

ment, but also fosters the belief in the recipients that it is not the intention to recover such advances, a belief that would, in future emergencies, tend to modify the liberality of Government.

26. *Relations between landlord and tenant.*—The Board, for reasons which they state, are of the opinion that in Bengal the relation of landlord and tenant is in a state of transition from the patriarchal type to that of strict legal contract. This state of transition is, in their belief, not satisfactory to either party. This is true of all transitions, and the end, which the Legislature had plainly in their view, must be patiently awaited. The progress towards it may be slow, but it was not to be desired that it should be rapid. Unless the new adjustment is gradual in its effect, the relations, which the Board describe as fairly satisfactory, would necessarily be strained. The Government could desire no better verdict than that which the Board have given. Evasions and revolts there must be, as the change works on, and indeed will be, when the consummation is reached. It is for the District Officers to keep their eyes open, and steadily check these aberrations as they occur. And it is a pleasure to the Lieutenant-Governor to understand from the Board's minute review that in this great and diversified province the submission to the rent law is so general, and the deviations partial and lessening.

Among the cases mentioned by far the worst, in one sense, is that of certain shopkeeper-tenants in Nadia, who have purchased land as a speculation and have been extorting excessive rents by a system of annual leases. The Lieutenant-Governor presumes this to refer only to the tenants-at-will on these properties, but he would be glad to have further details and to learn what the Collector is doing to stop this. In the Kishanganj portion of the district of Purnea, it is reported that many so-called dacoities are in reality concocted cases arising out of the coercion of recalcitrant raiyats, and the tenants are said to be recalcitrant, because there are unsettled disputes among co-parcenary landlords. If this be the case, the obvious remedy is a definition of their rights, and the Lieutenant-Governor understands that the Collector's proposals to that end are now before the Board. He is glad of the opportunity of commending this measure to Collectors as an extremely efficacious pacificator in cases of agrarian dispute. In a case which he has just seen in the Police Department, a property in the Rajshahi district, which had been the scene of serious riots, is reported to be now at peace. And it is from this regard that it has been arranged to survey and make a record of rights for the whole district of Backergunge.

27. *The Bengal Tenancy Act.*—The Bengal Tenancy Act is generally reported to have worked smoothly. The Bengal Tenancy Amendment Act, III (B.C.) of 1898, under which a new procedure has been prescribed for settlements, came into force on the 2nd November 1898, and Chapter VI of the Government Rules under it has been revised and republished. In January 1899, the Act was introduced into the Jalpaiguri district almost entirely in the permanently-settled parts and, with certain reservations, in the Western Duars.

The working of some of the most important sections of the Bengal Tenancy Act in the various Divisions of the province is shown below :—

1	2			3	4	5	6	7	8	9	10	11	12
DIVISIONS.	TRANSFER OF TENURES.			Commu- tation of rent payable in kind, section 40.	Appraise- ment or division of pro- duce where rent is paid in kind, sections 69 and 70.	Registra- tion of improve- ments, section 80.	Certifi- cates of Collectors as to acquisi- tion of land for building or other purposes, section 84.	Notices of re- sumption of land by land- lords, section 87(2).	Written permis- sion to land- lords to measure land under section 90.	Applica- tions by Collectors for ap- point- ment of common Mansdar under section 93.	Applica- tions made for survey and record of rights under Chapter X.	Applica- tions made for survey and record of pro- prietors' private lands under Chapter XI.	Local enquiries held by order of a Court, section 158.
	(a) Vol- untary, section 12(3).	(b) By decrees sale, sec- tions 13(2) and 14.	(c) By succe- sion, sec- tion 15.										
Burdwan	3,854	104	949	338	7	10	1	31	...	...	...	...	7
Presidency	4,520	205	481	1	4	3	...	9	...	...	...	...	6
Rajahm	537	48	42	...	3	...	...	4	...	...	...	...	...
Dacca	1,572	1,055	470	...	...	10	...	16	...	...	...	...	...
Chittagong	2,145	944	410	...	...	20	...	15	...	...	...	...	1
Patna	438	2	1	224	554	187	...	577	...	...	...	...	41
Bhagalpur	763	5	7	...	493	...	1	9	...	...	...	...	31
Orissa ... ..	...	...	...	...	...	95	...	...	...	...	...	...	...
GRAND TOTAL FOR 1898-99.	13,850	2,368	1,660	553	1,090	331	12	640	...	...	45	...	85
GRAND TOTAL FOR 1897-98.	15,495	2,528	1,616	800	1,216	336	7	918	...	...	46	5	37
Difference	-1,636	-160	+115	-247	-126	-3	+5	-278	...	-3	-1	-5	+48

The above table clearly emphasises the fact that many of the provisions of the Act are very slightly utilised. For various reasons, which time alone will dispel, landiords still show reluctance to take the fees paid under sections 12 to 17 of the Act.

28. *Rent suits.*—The number of suits tried in Revenue Courts under the provisions of Acts X of 1859 and I (B.C.) of 1879 during the years 1897-98 and 1898-99 are compared below:—

DISTRICT.	NUMBER OF CASES INSTITUTED.		Increase.	Decrease.
	1897-98.	1898-99.		
1	2	3	4	5
Darjeeling	53	205	152	...
Jalpaiguri	5,290	4,825	...	465
Cuttack	4,757	5,350	593	...
Puri	2,679	3,049	370	...
Balasore	3,287	2,583	...	704
Hazaribagh	2,697	2,489	...	208
Ranchi	5,184	6,325	1,141	...
Singhbhum	597	632	35	...
Manbhum	5,711	6,839	1,128	...
Palamau	297	809	12	...
Total	30,552	32,606	3,431	1,377

From the 1st January 1899—the date from which the Bengal Tenancy Act was extended to the Jalpaiguri district—all rent suits and fresh applications for execution in that district were instituted in the Civil Courts, and the number of cases shown in the above statement against this district for 1898-99 were for only nine months prior to the introduction of the Act. In Balasore, the decrease was chiefly in rent suits and execution cases owing to the settlement of disputes of rent in the present settlement. In Ranchi a large number of suits for recovery of rents were instituted by the Maharaja of Chota Nagpur, who, like other land-lords, had refrained from adopting stringent measures in the previous years owing to the scarcity; and there were also increased institutions of claims for rent in lieu of predial services under the Chota Nagpur Commutation Act, IV (B.C.) of 1897. The increase in Manbhum is due to a smaller number of institutions during the preceding year on account of scarcity.

29. *Miscellaneous.*—During the year 809,365 cases of all kinds were instituted and 130,092 cases were pending from the previous year. The cases disposed of numbered 791,526. The corresponding figures for the previous year were 765,704 and 792,691.

30. *Training of Junior Civilians in survey-settlement work.*—Two training camps were opened in North Bihar—one in Saran on 12th December 1898, and the other in Darbhanga, about a month later, the course in each lasting for about two months. At these two camps eleven officers were instructed in the elementary principles of survey and settlement work, including traverse and cadastral survey, khanapuri, attestation, and the disposal of boundary and internal disputes, under the direct supervision of the officers of the Survey and Settlement Departments. Advantage was also taken of settlements going on in Bankura, Backergunge, Bhagalpur and Cuttack to give some rudimentary training to five more officers.

32. *General.*—The thanks of the Lieutenant-Governor are due to the Board for their careful and efficient administration of the Land Revenue Department, and for their excellent report. The paragraphs relating to the several District and subordinate officers mentioned as deserving of special commendation will be communicated to the Appointment Department.

By order of the Lieutenant-Governor of Bengal,

F. A. SLACK,

Offg. Secy. to the Govt. of Bengal.

RESOLUTION ON THE ADMINISTRATION REPORT OF THE COMMISSIONERS OF CALCUTTA FOR THE YEAR 1898-99.

MUNICIPAL DEPARTMENT.—MUNICIPAL.

Darjeeling, the 18th November 1899.

RESOLUTION—No. 780T.—M.

READ—

The Administration Report of the Commissioners of Calcutta for the year 1898-99.

Read again—

The Report for the year 1897-98, and the Resolution recorded by Government thereon.

THE office of Chairman of the Corporation was held by Mr. R. T. Greer up to 23rd November 1898, when he was relieved by the permanent incumbent, Mr. W. R. Bright. Babu Nilambar Mukerji continued to hold the office of Vice-Chairman throughout the year, and the Commissioners have since the close of the year recorded in a unanimous Resolution their appreciation of the value of his services. There were only four changes in the personnel of the Corporation, all among the nominated Commissioners.

2. In the opening Chapter of the Report the Commissioners have given an interesting account of the chief works carried out and the principal reforms effected during the ten years that have passed since Act II (B.C.) of 1888 came into force. Referring to the programme prepared by Sir Henry Harrison of the wants of the newly added suburban area, they show that filtered water has been extended throughout at a cost of 18 lakhs of rupees; that a comprehensive scheme of underground drainage has been prepared and sanctioned, to cost 26 lakhs, and is now in course of execution; that a *dh. bikhana* and an incinerator have been constructed; that something has been done to fill up insanitary tanks, to reform the condition of the Muhammadan burial grounds, and to improve the arrangements for conservancy; that the unfiltered water-supply has been extended at a cost of 8 lakhs of rupees; and that five fine new roads have been opened out. The effect of these improvements is reflected in the decreased death-rate in the suburban area, which is now 35·8 per mille, as compared with 42·7, the average of five years before the amalgamation. Taking the town and suburbs together, 167 lakhs of rupees have been spent from capital and revenue on works of improvement, the principal items of which are the construction of the Harrison Road, the extension of the water-supply, both filtered and unfiltered, the development of the underground drainage system, the construction of 27 miles of new minor roads, the reclamation of bustees, and the more effective disposal of town refuse.

The record is a good one, and the Lieutenant-Governor desires to accord all due credit to the Commissioners under whose management it has been achieved. At the same time it would be an easy, if ungracious, task to point out that there is another side to the shield. It has often been remarked that the Commissioners are seen at their best in dealing with large projects. Had they devoted to the everyday work of the town,—to the collection of their revenues, to the conduct of their conservancy, and to the enforcement of their building regulations,—the same energy and interest that they have brought to bear on more showy but not more important matters, their administration would have claimed a different verdict from the voice of public opinion.

3. *Meetings and attendance of Commissioners.*—There were 30 general meetings of the Commissioners, 135 meetings of Standing Committees, 55 of Special Committees, and 32 of Sub-Committees. Seventeen Commissioners—12 elected and 5 nominated—attended more than 50 meetings during the year. The percentage of attendance among the elected Commissioners, the Commissioners nominated by Government, and the commercial representatives was 52, 42, and 41, respectively.

4. *Proceedings of Commissioners.*—The most important subjects which engaged the attention of the General Meetings were the Calcutta tramway question, the necessity of opening out the congested districts of Calcutta, and the discussion of the provisions of the Calcutta Municipal Bill. As regards the negotiations with the Calcutta Tramways Company, which have been under consideration since January 1897, it is understood that since the close of the year a satisfactory settlement has been arrived at. Arrangements have been made for the introduction of electric traction, and it may be hoped that with its employment the service will be greatly improved. For years past it has been a standing reproach to the town.

The necessity of opening out the congested areas of Calcutta, vital as it is to the health and sanitary administration of the town, presents a problem beyond the unaided resources of the Corporation. They have submitted to Government a representation on the subject, and the method of dealing with the question is at present under consideration with the Government of India.

The provisions of the Calcutta Municipal Bill, on which Government had desired a report by 1st July 1898, were discussed by a Special Committee in 44 meetings, and the final instalment of their Report was forwarded to Government on 13th April 1899.

5. *Finance.*—The total actual income for the year, excluding transfer adjustments from capital funds, was Rs. 48,25,660. This is an increase of Rs. 75,000 on last year's income, but falls short of the estimated receipts by no less than Rs. 3,39,000. The deficiency is remarkable, and the reasons for it are not examined in the Report in such detail as the importance of the subject deserves. It is ascribed to a too optimistic system of framing estimates, which has since been discontinued, and to the generally adverse influence of the plague epidemic. The subject falls principally under the head of collections. The largest deficiency is of Rs. 1,27,000 in the general rate.

The total expenditure for the year was Rs. 48,01,042. The Corporation has thus kept within its income for the year, though the margin is but a small one.

The actual expenditure was Rs. 63,000 above that of last year, but Rs. 2,13,000 below the budget grant for the current year. The largest decreases from the budget grants are under Road Department expenditure (Rs. 68,000), hospitals and vaccination (Rs. 33,000), and road cleaning (Rs. 32,000)—all objects upon which it is unfortunate that it should not have been found possible to spend the full amount sanctioned. On the other hand, Rs. 48,000 in excess of the budget estimate was expended on sewer cleaning and relaying.

After taking into account the transfer adjustments between revenue and capital funds, the four revenue funds together show an income of Rs. 53,73,760, and an expenditure of Rs. 51,11,466, the closing balance having risen to Rs. 5,78,962. Of these adjustments, Rs. 2,08,204 represents the amount advanced for plague expenditure and subsequently recouped, and Rs. 12,000 the contribution from capital funds to the pay of the supervising establishment. The remaining items are paper transactions between the various revenue funds.

The various statements of account given in the Report are somewhat confusing, and render it difficult to readily understand the financial position of the Corporation. In future a simple balance sheet should be given showing clearly the opening balance, the receipts, expenditure, and closing balance of the year. This should be divided into two parts—one dealing with Revenue and the other with Capital.

6. *Loans.*—The year opened with a total loan liability of Rs. 2,67,72,379, of which Rs. 40,46,479 represents the balance of consolidated loans from Government. Of the latter, Rs. 2,95,444 were repaid in the year under review.

Two new loans were floated during the year: one of 30 lakhs for 19 years, required for drainage and other projects, and a special one of 4 lakhs for plague expenditure. An additional deposit of 1 lakh on account of the 4 per cent. loan of 1897-98 was made during the year. At the close of the year the total loan liability was Rs. 2,99,76,934. Against this there were in the hands of the Corporation reserve fund accumulations amounting to Rs. 24,51,520.

The present charges on account of interest and payments to the sinking fund amount to Rs. 17,86,449, the limit imposed by law being Rs. 21,38,061, i.e., 10 per cent. on the total annual valuation of the town.

7. *Assessment and Collection of Revenue.*—The revaluation of houses, lands, and bustees resulted in an increase in 4,798 cases, amounting to Rs. 8,07,078, and a decrease in 1,678 cases, amounting to Rs. 2,80,935. The net increase per annum was therefore Rs. 5,26,143, representing an increase in the consolidated rate of roughly 1 lakh. The assessed valuation of the town on 31st March 1899 was Rs. 2,13,80,610.

The following statement shows the result of the working of the collection departments during the year under review:—

NAME OF DEPARTMENT.	Opening balance.	Current demand.	Total.	Collections.	Remissions.	Closing balance.	Percentage of total collections on current demand.	Percentage of total collections on gross demand.
1	2	3	4	5	6	7	8	9
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
Collector's ...	1,81,882	32,65,216	34,46,568	26,00,438	1,01,896	(b) 1,93,460	86.41	81.81
Joint-Collector's ...	23,800	7,73,069	7,96,269	6,44,020	25,548	(c) 4,364	83.31	80.98
Warrant Department.	6,53,234	...	(a) 11,17,262	3,31,078	80,360	6,95,792	71.34	19.63
Total ...	8,58,776	40,38,275	48,96,051	37,84,540	2,17,843	8,93,076	93.71	77.31

(a) Includes Rs. 3,42,740 transferred by the Collector and Rs. 1,81,293 transferred by the Joint-Collector to the Warrant Department during the year.

(b) Excludes Rs. 3,42,740 transferred to the Warrant Department during the year.

(c) Excludes Rs. 1,21,298 ditto ditto.

In order to show clearly both the total results and the separate working of each department, it is necessary to present the figures in this rather complicated form, taking into account the transfer from other departments to the Warrant Department of portions of the current demand. It is a defect in the accounts presented in the Report that they do not show in a simple form the actual progress of the collections. For administrative purposes it is doubtless necessary to keep the Warrant Department separate from that of the Collector. But both are really a part of the machinery for collection of taxes, which for financial purposes must be treated as a whole. The Lieutenant-Governor desires that in future reports a statement similar to the above may be given; and also that a statement may be given showing in a similar form the combined figures of the Collector's and Warrant Departments for 10 years.

The proper collection of its revenue has always been one of the principal difficulties of the Corporation, and is one of those which it has least efficiently dealt with. Hopes and anticipations of amendment have been frequently expressed, but have so far never attained to realization; and the outstanding balance of arrears has steadily continued to mount up until it has reached its present enormous proportions. To this rule the year under review has proved no exception. The gross collections are considerably short of the current demand, and the outstanding balance shows consequently an appreciable increase. It is true that the circumstances of the year furnish some excuse for this, and that had the work of collections not been considerably impeded by the exodus that followed on the outbreak of plague, it might now have been possible to record an improvement on the previous state of things. But there can be no doubt that the accumulation of so large a balance as that at present outstanding has been due to no temporary and fortuitous causes, but to the inefficiency of the collecting departments and to the mistaken leniency of the Commissioners themselves. An instance of their reluctance to allow prompt measures to be taken for the realization of their revenue is furnished by their continuous refusal to allow the service of notices of demand by the Collector in any but the final quarter of the year. The necessity of doing so was, for the third time, brought to the notice of the Commissioners by Government in last year's Resolution; but it was not until after the close of the year under review that it has been found possible to persuade them to adopt the suggestion as a tentative measure. Had it been adopted earlier,

it may safely be conjectured that the arrear balance would not now stand at its present figure. It is once more necessary to point out that undue leniency in the matter of collecting taxes is a mistaken kindness to the rate-payer. It is not alleged that the rates are so crushing as to encroach on the margin of subsistence even of the poorest classes; and in cases where they may be found to be excessive, ample remedies are provided temporarily by the very liberal remissions at present allowed, and permanently by the periodical reassessments. It is obvious, on the other hand, that the accumulation of such large arrears as are at present outstanding is likely to afford the subordinate collecting staff such facilities for fraud and extortion as must ultimately prove a far heavier burden on the poorer rate-payers than a prompt insistence on the realisation of the just demands of the Municipality. The Lieutenant-Governor looks forward to an improvement in this respect under the arrangements which have at last been made. The working of the now reorganized Warrant Department affords grounds, when compared with the results of previous years, for a certain amount of satisfaction. Its collections are largely in excess of those of the previous or any other year, and the closing outstanding balance is not greatly larger than the opening balance. In other words, the department has, with the aid of very large remissions, almost succeeded in keeping pace with the current year's work.

8. *License Department.*—The following statement compares the gross receipts under the several heads in this department for the last two years :—

1	2	3	4
Heads of Receipts.	Amount realised, 1898-99.	Amount realised, 1897-98.	Budget estimate.
	Rs. A. P.	Rs. A. P.	Rs.
I.—Tax on trades and professions	3,21,585 6 11	3,34,204 7 1	3,45,000
II.—Tax on carriages and animals...	1,43,669 5 6	1,40,287 3 10	1,45,000
III.—Cart registration fees ...	75,786 4 0	80,643 4 0	78,000
IV.—Fees for removal of trade refuse ...	54,255 0 0	58,867 0 0	65,000
V.—Fees for licenses under section 335 (stables, cows and bullock-sheds, &c.) ...	330 0 0	218 0 0	100
VI.—Hackney-carriage, &c., registration fees ...	16,751 4 0	16,549 9 4	19,500
VII.—Miscellaneous receipts ...	622 5 0	1,037 14 9	.....
VIII.—Fines under section 90 ...	10,911 13 9	10,388 14 2	} 16,333*
IX.—Ditto 80 ...	2,428 8 0	1,304 8 0	
Total ...	6,29,339 15 2	6,43,500 13 2	6,68,933

* This is 3/4ths of the total estimate of fines under the Act.

For the second year in succession these figures show a decided diminution, while the receipts from the tax on trades and professions have been steadily declining for four years running. The explanation given amounts to a confession of weakness on the part of the collecting agency. It appears that the ground lost during the exodus at the opening of the year had by the last fortnight been completely made up, but that the rise in the number of plague cases at the very end of the year made people "unwilling to part with their ready money for the payment of taxes." Such unwillingness, however, is peculiar neither to Calcutta nor to a period of plague; and the truth appears to be that the department is too ready to regard a difficulty not as a thing to be faced, but as an excuse to be put forward for deficient results.

The attention of Government was drawn by the figures given in last year's report to the extraordinary number of police court prosecutions instituted by this department, and to the nature of the results obtained in them.

It was remarked that these results pointed to inexcusable dilatoriness and laxity in the management of the department, and the Lieutenant-Governor

expressed his opinion that the police courts were not an appropriate agency for the collection of municipal dues. The same facts are, however, still more prominent in the present year. The number of prosecutions disposed of under section 90, which in 1896-97 was 8,761 and in 1897-98 14,139, has risen in the year under review to 17,991. Of these, no less than 10,037 were struck off or withdrawn without payment of fees; 6,619 were withdrawn on payment of the fees; and only 1,187 resulted in the infliction of a fine. The total number of persons prosecuted was 12,686 out of 25,029 assesses, or more than 50 per cent. of the whole. Nothing could be less satisfactory than these results or the explanation given of them.

It appears to have been the regular practice of the License Department to institute prosecutions at random and in immense numbers without first ascertaining even the whereabouts of the defaulters. Consequently processes are not served, and a large number of cases are struck off.

The Lieutenant-Governor is prepared to make full allowance for the undoubted difficulty occasioned by the plague scare in the first quarter of the year, and he recognizes that some attempt has been made to avoid concentrating all the cases into a single month, the number filed in June 1899 being 10,906, against 14,416 in June 1898 and 10,148 in June 1897. But it is beyond doubt that the License Department has fallen into the habit of expecting the Police Courts to do its work for it, and this grave evil must be finally stopped. Under the provisions of the new law lately passed by the Bengal Council the ordinary procedure for the recovery of these dues will be by notice of demand, followed when necessary by distraint and sale, as in the case of the consolidated rate. The assessee may still elect to be prosecuted, if he prefers; but as in that case he is required to first deposit the amount due from him, it is unlikely that more than a very few prosecutions will result from the exercise of this option. The Chairman retains the power to prosecute if he thinks fit; but it is intended that this power shall be most sparingly exercised, if at all. The License Department will thus be relieved of the work of conducting prosecutions in court and of attending the service of summonses; and will be free to attend to its proper work of making assessments, serving notices of demand, and collecting its dues. The duty of directing distraints will devolve upon the Warrant Department; and the attention of the Chairman is invited to the necessity of making early arrangements to enable it to cope with these new duties promptly and effectively.

9. *Market, Lighting, and Printing.*—The collections of the Municipal Market for the year were Rs. 1,28,540 against Rs. 1,32,117 in the previous year.

At the end of April 1898, a large number of dead rats were discovered in the market, which on examination were found to be plague-stricken. A general exodus of vendors took place at once, and though some returned in the following month, there was a second exodus in June, which prevented the market being fully tenanted until the end of July. Under these circumstances, the falling off in revenue is small. There was a great decrease of expenditure under Repairs, on which large sums were spent after the earthquake in 1897-98, and also in cartage; and consequently the net profit derived by the Corporation, including the charges on account of loans, was Rs. 42,565 against Rs. 16,281 in the previous year.

The usual amount of progress was made in improving the lighting of the town, the expenditure under this head being Rs. 4,20,783 against Rs. 4,15,448 in the preceding year. In the Printing Department there was a largely-increased outturn in connection with plague work, the financial result being a nominal profit of Rs. 9,048 against an average of Rs. 3,025 during the three preceding years. This is, however, merely a paper transaction, and does not represent actual gain, but only the saving effected by doing the work departmentally instead of through outside presses.

10. *Litigation.*—Eighty-nine fresh civil suits were instituted for recovery of dues during the year against 36 in the preceding year. Decrees were obtained in 71 of these, 4 were compromised and withdrawn, and 14 were pending at the close of the year. The Warrant Department continues to be unsuccessful in executing decrees. This was commented on by Government last year, and the somewhat superfluous explanation is now given that great

difficulty was experienced in the work. It is hoped that the energetic steps which are now reported as being taken will be productive of result.

Four civil suits were instituted against the Corporation during the year. In two of these the Corporation was successful, and two were left undecided.

Enquiries were made as to the possibility of recovering a sum of Rs. 11,811 of which the Corporation had been defrauded by the action of an employee at the Municipal Workshop at Entally. The amount, however, was ascertained to be irrecoverable.

The total number of criminal prosecutions instituted by the Corporation was 37,544 against 30,798 in the previous year. Of the various departments concerned with these prosecutions, the work of the License Department has already been commented on. Of the remainder, the Conservancy Department instituted 9,044 cases against 6,461 last year, while the Food Inspection Department instituted only 145 against 293. The latter fact is, as the Chairman remarks, one to be regretted, and the residents of Calcutta not unnaturally continue to complain of the immunity with which unwholesome and adulterated food is sold.

In spite of the fact that 37,544 cases were instituted, the amount of fines realized was only Rs. 35,202, whereas in 1896-97 Rs. 43,132 were realized in 25,778 cases. The reason of this is partially explained by the remarks already made on the working of the License Department. It is further stated in the report that the fines imposed by the Honorary Magistrates were inadequate and ineffective as to their deterrent effect. This seems to have been conspicuously the case in prosecutions under sections 240 to 242, for building houses without submitting plans; the average fine imposed in these cases being Rs. 3-13-9. The Chairman adds that this remark has been made year after year in the Annual Reports, and that it is a matter of concern as well as of regret that it has to be repeated again this year. The Commissioners have consistently declined to apply to Government for the appointment of a special Magistrate under section 422 of the Act for the trial of municipal cases. Under the new law, this power vests in the Government, and it will be considered whether an early opportunity should not be taken to exercise it.

11. *Town and Bustee improvements.*—The total expenditure under this head was Rs. 99,626 against Rs. 57,340 in the previous year. Of this sum, Rs. 77,681 was absorbed by town improvements, and Rs. 13,058 was spent on the acquisition of land for bustee roads. No mention is made of the work done in constructing bathing-platforms and filling up insanitary tanks during the past year. The latter question has been noted by the Chairman in his general review of the work of the last 10 years as one which the Corporation have found it impossible to deal with adequately in the suburban area.

12. *Engineer's Department.*—In the matter of water-supply there is nothing to record but the ordinary progress of the existing system. The mileage of pipes for filtered water was slightly extended and now amounts to 315·05 miles. The average daily consumption of filtered water was 20,684,393 gallons against 20,638,212 in the previous year, and the estimated daily consumption per head was 34·01 gallons in the town proper and 19·86 in the added area. The gross cost per 1,000 gallons was 2·66 annas.

The daily supply of unfiltered water decreased from 5,461,823 to 4,778,899 gallons, the consumption per head on a population of 436,393 being 10·95 gallons.

As regards drainage, the extensive improvements in the sewage and storm water outfalls of the town and suburbs and the provision of a system of sewers for the suburbs are at present in hand under contract, and are not dealt with in this Report. The work of the Engineer's Department in this respect was confined to keeping in repair and reconstructing the existing 200 miles of public sewers. Three hundred and twenty premises were connected with the public sewers during the year, raising the total number to 30,168.

13. *Health of the Town.*—Unfortunately the vital statistics for the year have been considerably complicated by the large exodus to which reference has so frequently been made in this review. The calculations are based on the census figures of 1891, but what the actual resident population was can only be guessed at. It is, however, stated that the year was a healthy one, and,

except for plague, it was not marked by the outbreak of any epidemic. The birth-rate was exceptionally low, being only 13·9 per 1,000 against a previous quinquennial average of 17·92. The birth-rate in Calcutta is always far lower than in the mufassal, owing to the small proportion of females and the custom among women of returning to their native place in order to give birth to a child. The latter tendency was of course greatly strengthened by the fear of plague.

The death-rate was 29·8, the average of the previous five years being 34·80 and the provincial birth-rate for the year being 26·57. The mortality in the canal and suburban area shows a remarkable decrease from 44·7 in the previous year to 35·5 in the current one. The unhealthy condition of the canal area is a matter that calls for serious attention, and the Lieutenant-Governor would be glad to receive a special report showing what has been done and what it is proposed to do in the future to apply a remedy. The figures of infant mortality—always lamentably high in Calcutta—present some curious features. Among infants under 1 year of age the death-rate was 368·5 per mille, which is very far below that of the five years' average (437·5), though nearly double the provincial rate for the current year (192·35). But among Muhammadans it stands at the enormous figure of 634·5, while among Christians it is as low as 217·7. The Health Officer is unable to suggest any difference in the conditions of life of these two classes which will sufficiently explain the extraordinary excess of mortality among Muhammadans.

The mortality from fevers was 6,060 as compared with the average of the previous decade of 8,426. The Health Officer regards this decrease with satisfaction, as tending to allay the fears which had been felt that the high mortality of recent years from this cause has been due not to a cyclical wave of increased intensity, but to deterioration of the site of the town itself. In his next sentence, however, he qualifies the expression of satisfaction by stating that after the appearance of plague many people registered deaths under other causes which would in other years have been registered under fevers. It will, therefore, be necessary to await a return to normal conditions in order to form a definite opinion on the subject. As the result of experiments which have recently been made on the theory of causation of malarial fevers by mosquitoes, the Health Officer suggests that an endeavour should be made to exterminate them in their breeding grounds. He, however, expresses himself with caution as to the probable results. The mortality from cholera was 665 only, against an average of 2,181 for the previous nine years; and there was an equally satisfactory absence of small-pox, the deaths from this cause numbering only 85.

Vaccination was greatly hindered by the violent opposition to preventive inoculation against plague, which led to some of the vaccinators being mobbed and assaulted as inoculators, and made it necessary to practically suspend work for nearly three months. In consequence, the number of persons vaccinated fell from 21,620 to 13,225, of which 11,569 were primary and 1,686 revaccinations. Of operations in which the results were ascertained, the proportion of successful cases was 99·07 per cent. in primary cases and 23·68 in revaccinations. 3,198 infants under 1 year old were vaccinated, giving a ratio of 33·55 per cent. on the birth-rate for the year. A scheme for the re-organization of the Vaccination Department was drawn up by the Health Officer with a view to remedying the defects in the existing system; and has received sanction since the close of the year.

14. During the year the Conservancy Department was transferred from the charge of the Health Officer to that of the Engineer. The change, however, was not found to work satisfactorily, and was cancelled after two months.

In conservancy a reform has been introduced, which it is hoped may prove effectual. Instead of the administrative unit being the ward, with a host of petty and irresponsible subordinates to each, it is now the block, or subdivision of a ward, in charge of a single responsible sarkar. The Health Officer, while expressing an opinion that the system is thoroughly sound in principle, notes that its weak point is its dependence on the sarkars, who, as at present appointed, "have very little aptitude for their work, and appear to associate their interests rather with those of the coolies than with those of the authorities." This admission is not very creditable to the supervision exercised by the

officers of the Health Department, and the Lieutenant-Governor hopes that the latter will realize that the success or failure of this all-important branch of municipal administration must depend on the amount of energy and attention devoted by themselves to supervising their subordinates. If proper attention is given by them, the new scheme can hardly fail to effect a much-needed improvement; if it does not do so, it will at least be obvious in future with whom the responsibility for its failure must rest. Proposals were submitted by the Health Officer for still further and more radical reforms in the establishment. These, however, did not receive the sanction of the Corporation.

Another important improvement has been the introduction of an afternoon, in addition to a morning, conservancy service. This is much appreciated by the public. It should be noted that the new scheme has as yet hardly had time to get into working order, and that its operations have been hampered by scarcity of labour during the past year.

It is hoped that in the future the greatest vigilance will be exercised in keeping this most important branch of administration up to a proper level of efficiency, and that the state of the public streets in Calcutta will no longer give reason for the severe, but well-merited comments which have been so constantly made upon it in the past.

15. During the year there were two outbreaks of plague in Calcutta, the first, which was restricted in incidence, in April, and the second, which was most extended and persistent, in the middle of the cold weather of 1898-99. By orders issued under the Epidemic Diseases Act of 1897, measures for the prevention and extirpation of plague in Calcutta are entrusted to the Chairman alone, assisted by a special staff, and are not subject to the control of the Commissioners. The matter is therefore not dealt with in the present Report and falls outside the scope of this review. It would be out of place on the present occasion to discuss the policy which has actuated the Government in dealing with plague in Calcutta, the measures which were from time to time adopted, or the success or failure which attended them. This will be done when the history of plague in Bengal comes under review. For the present the Lieutenant-Governor desires to avail himself of the opportunity of publicly expressing his acknowledgments to those whose efforts have contributed to keeping the epidemic within narrow bounds. Amongst officials are the successive Chairmen, Mr. Greer and Mr. Bright; Major Evans, the Chief Plague Officer, and Dr. Hossack, one of his Assistants. The character of their duties demanded a constant patience and kindly temper, and this difficult but essential combination of qualities all four possessed and showed. Many of the Municipal Commissioners gave excellent help on the Vigilance Committees, which formed the first of the plague measures in Calcutta. Amongst private gentlemen, two were eminent—Babu Hari Ram Goenka and Dr. Rai Koylash Chandra Bose Bahadur. The former, a Municipal Commissioner and an active member of the Vigilance Committee of his Ward, not merely subscribed large sums towards the establishment of an admirable hospital for his fellow-caste men, but by his activity and influence contributed largely to secure the co-operation of the public with the efforts of the authorities. The latter rendered invaluable service in bringing to light the progress of the disease, and by his sympathy and tact in winning over the ignorant to acquiesce in the measures necessary for its suppression.

By order of the Lieutenant-Governor of Bengal,

E. N. BAKER,

Offg. Secretary to the Govt. of Bengal.

WEATHER AND CROP REPORT.

For the week ending the 20th November 1899.

Burdwan.—No rain. Weather seasonable. Condition of *aman* paddy and sugarcane good. Sowing of *rabi* crops continues. Cultivation of potato going on. Fodder and water sufficient. Common rice selling as follows :—

	Srs.	
Sadar	15	} per rupee.
Kaina	13½	
Katwa	15	
Raniganj	14	

Birbhum.—No rain. Weather seasonable. Harvesting of *awa* finished. Sowing of *rabi* continues. Prospects of winter rice good. Price of common rice at Sadar and Rampur Hat 15 seers per rupee. Fodder sufficient.

Bankura.—No rain. Weather seasonable. Harvesting of *nuan* paddy nearly finished. Sowing of wheat continues. Other standing crops doing well. Sporadic cases of cow-pox reported. Fodder and water sufficient. Price of common rice at Bankura 16 seers, and at Vishnupur 15 seers 10 chitaks per rupee.

Midnapore.—No rain. Weather seasonable. Prospects of winter rice very good. Harvesting begun. *Rabi* crops being sown. Cattle-disease reported from Jhargram and Garhbeta. Fodder and water sufficient. Common rice sells as follows :—

	Srs. ch.	
Sadar	16 0	} per rupee.
Contai	15 0	
Tamluk	14 8½	
Ghatal	16 0	

Hooghly.—No rain. Weather seasonable. Prospects of crops good. Common rice sells at 14 seers 1 chitak per rupee.

Howrah.—No rain. Weather seasonable. Harvesting of *aman* commenced in places. Sowing of *rabi* still going on. Fodder and water sufficient. Common rice sells at 13½ seers per rupee.

24-Parganas.—Rainfall nil. Weather seasonable. Prospects of crops good. Harvesting of *aman* on high lands continues. Sowing of *rabi* crops going on. No cattle-disease reported. Fodder and water sufficient. Common rice sells as follows :—

	Srs.	
Sadar	12	} per rupee.
Barasat	15	
Basirhat	17½	
Diamond Harbour	14½	

Nadia.—No rain. Weather seasonable. Prospects of standing crops good. Sowing of *rabi* still continues. Harvesting of *aman* commenced. Fodder and water sufficient. Price of common rice stationary.

Murshidabad.—No rain. Weather seasonable. Prospects of *aman* favourable. *Kalai* doing well. Sowing of *rabi* continues. Harvesting of early *aman* commenced. No cattle-disease. Fodder and water sufficient. Common rice sells as follows :—

	Srs.	
Sadar	15	} per rupee.
Jangipur	15	
Kandi	17½	

Jessore.—Rainfall nil. Weather seasonable. Early *aman* paddy is being harvested. Sowing of *rabi* crops going on. No cattle-disease reported. Fodder and water sufficient. Common rice sells as follows :—

	Srs.	
Sadar	16	} per rupee.
Jhenida	18	
Magura	17	
Narail	16	
Bangaon	17	

Khulna.—Rainfall nil. Weather seasonable. Prospects of crops continue favourable. Cultivation of *rabi* crops continues. Fodder and water sufficient. Common rice sells as follows:—

Sadar	Srs.	17½	} per rupee.
Bagerhat	...	...	...		14½
Satkhira	...	...	...		14

Rajahahi.—No rain. Weather seasonable. Prospects of crops good. No cattle-disease. Fodder and water sufficient. Common rice selling at 17½ seers per rupee.

Dinajpur.—No rain. Weather seasonable. Standing crops fair. No cattle-disease. Fodder and water plentiful. Price of rice at Sadar 18 seers and at Thakurgaon 16 seers per rupee.

Jalpaiguri.—Rainfall nil. Weather seasonable. *Haimanti* paddy in good condition. Transplantation of tobacco and sowing of mustard going on. Common rice sells at 14½ seers per rupee. Fodder and water sufficient.

Darjeeling.—No rain. Weather seasonable. *Hills*—*Haimanti* paddy, *bara marua*, *kalai*, *phaphar*, *tori*, wheat and barley progressing. *Terai*—*Haimanti* paddy, potatoes, and mustard promising well. Coarse rice sells as follows:—

Hills	Srs.	9	} per rupee.
Terai		17	

Bhutta sells at Darjeeling 21 seers and at Kalimpong 23 seers per rupee.

Rangpur.—No rain. Sowing of *rabi* crops in full swing. Prospects of crops good. Common rice selling at 16 seers per rupee. Fodder and water sufficient. Cattle-disease prevailing in Nilphamari.

Bogra.—No rain. Cutting of paddy and *rabi* sowings commenced. Prospects good. Fodder and water ample. Common rice selling at 18½ seers per rupee.

Pabna.—No rain. Weather seasonable. Prospects of crops good. Winter paddy being harvested. Price of common rice 15 seers 3 chitaks per rupee.

Dacca.—Rainfall nil. Weather seasonable. Harvesting of paddy going on. Prospects of standing crops good. Fodder available. No cattle-disease. Common rice sells at 16 seers per rupee.

Mymensingh.—Rainfall nil. Weather cool and dry. Prospects of crops good. Water and fodder ample. Common rice sells at 17 seers per rupee.

Faridpur.—No rain. Weather seasonable. State and prospects of standing crops generally good. Common rice selling at 16 seers per rupee.

Backergunge.—Rainfall nil. Weather seasonable. Prospects of crops good. Common rice sells at 14 seers per rupee.

Tippera.—No rain. Weather seasonable. *Aman* harvest commencing. *Rabi* being sown. Average price of common rice 17½ seers per rupee.

Noakhali.—No rain. Prospects of crops good. Cattle-disease at Chagalnaya abated. Veterinary Assistant allowed to leave. Fodder and water good. Common rice (*aman*) 15 seers and (*aus*) 18 seers per rupee.

Chittagong.—Rainfall nil. Prospects of crops favourable. Water and fodder sufficient. Common rice 16 seers per rupee.

Patna.—No rain. *Rabi* sowings continue in some places. *Rabi* already sown germinating well. Prospects of paddy fair. Condition of cattle good. Water-supply for cattle plentiful. Common rice in Patna sells at 18 seers per rupee.

Gaya.—No rain. Harvesting of paddy going on. *Rabi* doing well. Poppy being sown. Common rice selling at 16 seers per rupee.

Shahabad.—Rainfall nil. *Rabi* being sown. Paddy harvesting commenced. Fodder and water abundant. Sixty-five cases of cattle-disease in Sasaram. Common rice at Sadar 12 seers per rupee.

Saran.—No rain. Weather seasonable. Harvesting of paddy commenced in places. *Rabi* doing well. Poppy sowing nearly completed; germination excellent. Average price of common rice 13 seers 12 chitaks and of *makai* 14 seers 8 chitaks per rupee.

Champanan.—No rain. Winter rice ripening; prospects fair. *Rabi* and poppy sowings in progress and germinating well. Price of common rice 14½ seers and of maize 17 seers per rupee.

Muzaffarpur.—Rainfall nil. *Rabi* sowings approaching completion. Prospects favourable. Prices are—Common rice 13½ seers, wheat 13 seers, barley 16½ seers, *makai* 16½ seers, gram 15½ seers, *rahar* 15½ seers, and *marua* 20 seers per rupee.

Darbhanga.—No rain. Weather seasonable. Prospects of standing crops good. *Rabi* sowings going on. Fodder and water sufficient. Cattle-disease reported from Sadar and Madhubani. Common rice sells as follows:—

	Srs.	
Sadar	12	} per rupee.
Samastipur	13	
Madhubani	13½	

Monghyr.—No rain. Weather seasonable. *Rabi* sowings going on. Paddy being harvested. Sugarcane-pressing commenced. Standing crops doing well. Poppy sowings progressing satisfactorily; prospects hopeful. Common rice sells as follows:—

	Srs. ch.	
Monghyr	12 10	} per rupee.
Beguserai	12 10	
Jamui	14 0	

Bhagalpur.—No rain. Weather seasonable. Early *aghani* paddy being harvested. *Rabi* sowings continue. Fodder and water plentiful. Cattle-disease continues in the interior of the district. Price of common rice going down owing to an influx of new rice into the market. Common rice sells as follows:—

	Srs. ch.	
Sadar	17 11	} per rupee.
Banka	13 2	
Supaul	19 0	
Madhipura	13 0	

Purnea.—Rainfall nil. Weather seasonable. Condition of *aghani* rice good. *Rabi* sowings progressing. Sugarcane being cut. Tobacco being transplanted. Cattle-disease prevails in thana Raniganj. Fodder and water sufficient. Common rice sells as follows:—

	Srs.	
Sadar	18	} per rupee.
Kishanganj	17	
Araria	18	

Malda.—Rainfall nil. Weather seasonably cool. Sowing of *rabi* still continues. Prospects of crops good. Fodder and water sufficient. Cattle-pox reported from Manik-chak thana. Coarse rice selling at 17 seers per rupee.

Sonthal Parganas.—Rainfall nil. Weather seasonably cold. Harvesting of early paddy in progress. Prospects of all crops good. Cattle-disease in Rajmahal. Fodder and water sufficient. Average price of common rice 13 seers 14 chitaks and of Indian-corn 20 seers per rupee.

Cuttack.—Rainfall nil. Weather seasonable. *Laghu sarad* being reaped. *Guru sarad* in ear. *Arhar* and sugarcane growing. Condition of men and cattle generally good. Fodder and water sufficient. Common rice sells as follows:—

	Srs. ch.	
Cuttack	15 1	} per rupee.
Jajpur	17 1	
Kendrapara	18 6	
Banki	16 0	

Balasore.—Rainfall nil. *Sarad* ripening. *Asu* being harvested. *Rabi* crops and sugarcane growing well. Prospects of crops good. Rice sells at 18½ seers per rupee in the interior, and at 16 and 18 seers per rupee at Balasore and Bhadrak respectively. Cattle-disease reported from Basudevpur Circle. Fodder and water sufficient.

Angul.—No rain. *Laghu* rice being harvested. Rain wanted for paddy planted late and for *rabi* crops. *Rabi* sown before the October rain doing well. Gathering of *biri* in progress. Common rice sells at 15 seers in Angul and 8½ to 9 seers in the Khondmals.

Puri.—Rainfall nil. Weather seasonable. *Laghu sarad* being harvested. *Bara sarad* in flower. *Kulthi*, *biri*, and other pulses thriving. Sugarcane being pressed. Fodder and water sufficient. Common rice sells as follows:—

	Srs. ch.	
Sadar	13 2	} per rupee.
Khurda	14 0	
Interior of district	14 2	

Hazaribagh.—Rainfall nil. Weather seasonable. Harvesting of rice in progress. Common rice sells at 12 seers per rupee.

Ranchi.—Rainfall nil. Weather seasonable. Harvesting of winter rice continues. Rice sells at Ranchi 11 seers, and in the interior 14 seers 13 chitaks per rupee. No cattle-disease reported. Fodder and water sufficient.

Palamau.—No rain. Weather seasonable. Paddy and *til* being harvested; outturn poor excepting in some places. *Rabi* sowing much below normal where there was no rain. Prices at Sadar are—Rice 11 seers, gram 15 seers, *makai* 14 seers, barley 17 seers, wheat 12 seers, and *marua* 17 seers per rupee. Cattle-disease reported from a few villages. Fodder and water sufficient.

Manbhum.—Rainfall nil. Weather seasonable. *Bhadoi* crops fair. Winter rice an average crop. *Rabi* crops promise well. Cattle-disease reported from thanas Purulia, Tundi, and Topchanchi. Fodder and water sufficient. Average price of common rice at Sadar 13 seers 10 chitaks and at Gobindpur 12 seers per rupee. Supply sufficient.

Singhbhum.—No rain. Rain wanted for *rabi*. Common rice sells at 14½ seers per rupee.

General Summary.—There was no rain during the week. The general prospects of the crops continue good except in some parts of the Chota Nagpur and Orissa Divisions. The winter rice crop is maturing, and on the high lands the harvesting is in progress. The *rabi* and all other cold-weather crops, including poppy, are being sown and germinating well, except in Chota Nagpur and Angul. The price of common rice shows a tendency to fall with the appearance of the new crop into the market. There is plenty of fodder in every district, and only a few cases of cattle disease are reported.

By order of the Lieutenant-Governor of Bengal,

F. A. SLACK,

Offg. Secretary to the Govt. of Bengal.

REVENUE DEPARTMENT,
The 21st November 1899.

PRICES-CURRENT (retail) of Food-grains and Salt in the Head.

Number.	DISTRICTS.	QUANTITIES PER RUPEE IN														
		WHEAT.			BARLEY.			RICE, BEST SORT.			RICE, COMMON.			JOWAR OR CHOLU. (Sorghum Vulgare.)		
		Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.
	BENGAL.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.
BARDWAN DIVISION.	1 Bardwan	12 0	12 0	14 8	...	...	...	11 6	11 0	10 0	14 8	13 0	13 8	...	...	...
	2 Birbhum	13 4	13 0	13 8	...	...	...	12 0	12 0	12 0	15 0	14 4	16 8	...	...	...
	3 Bankura	10 0	10 0	13 12	...	...	...	10 0	10 0	12 8	16 0	15 0	17 8	...	...	...
	4 Midnapore	13 0	10 0	12 0	...	...	...	11 0	11 4	11 0	16 0	17 0	14 0	...	...	...
	5 Hooghly	10 0	10 0	12 0	...	...	...	7 8	7 8	7 8	12 8	11 8	10 8	...	...	...
	6 Howrah	...	...	...	...	...	...	10 8	10 12	9 8	13 0	12 12	12 12	...	...	...
PRESIDENCY DIVISION.	7 24-Parganas	...	...	...	...	...	...	8 12	8 8	7 0	13 0	12 0	13 0	...	...	...
	8 Calcutta	9 6	10 10	13 0	13 0	12 4	16 0	8 0	7 9	7 9	11 6	10 10	11 4	...	12 4	16 12
	9 Nadia	...	13 5	13 5	22 13	22 14	...	7 4	6 10	6 10	12 13	12 10	13 5	...	...	...
	10 Murshidabad	16 0	Jamali. 14 0 15 0 Gangajali. 12 0 17 12			22 0	20 0	...	14 0	12 8	12 0	18 0	16 0	18 0	...	...
	11 Jessore	9 0	9 0	11 0	12 0	10 0	12 0	10 0	10 8	11 0	16 0	16 0	19 0	...	...	...
	12 Khulna	...	...	...	...	...	...	13 0	13 0	14 0	16 0	15 0	18 8	...	...	...
RAJBHABI DIVISION.	13 Rajshahi	15 0	16 8	16 8	26 4	24 0	22 8	10 10	10 8	13 8	18 0	17 4	17 4	...	...	...
	14 Dinajpur	9 9½	9-9-6½	12 0	13 5	13 5	16 0	9-9-3½	9-9-3½	12 0	18 0	18 0	18 0	...	...	...
	15 Jalpaiguri	10 0	9 0	12 8	...	...	...	5 0	5 0	5 8	13 8	13 0	18 0	...	...	...
	16 Darjeeling	7 0	7 0	8 0	8 0	8 0	9 0	5 8	5 0	5 8	11 0	9 8	14 0	...	...	...
	17 Rangpur	11 0	11 0	11 0	...	...	...	8 8	8 0	7 8	15 0	14 0	15 0	...	...	...
	18 Bogra	8 4	9 0	15 0	...	...	...	12 0	13 0	10 8	18 12	18 0	18 0	...	...	...
DACC DIVISION.	19 Pabna	16 8	16 8	15 0	35 0	35 0	22 8	6 8	7 0	6 0	17 10	17 4	18 12	...	...	...
	20 Dacca	9 2	10 0	13 0	32 0	32 0	26 0	10 0	10 0	12 0	18 0	18 0	19 0	...	...	...
	21 Mymensingh	10 0	10 0	13 8	...	...	...	14 0	14 0	10 0	16 0	16 0	13 0	...	...	...
	22 Faridpur	20 0	15 0	19 0	35 0	28 0	18 0	6 0	6 0	8 0	16 0	16 0	20 0	...	...	...
	23 Backergunge	...	...	...	...	...	...	12 0	13 0	13 0	12 12	12 12	14 8	...	...	...

- A. In the subdivisions the retail prices of salt per rupee are:—Kains 10 seers 10 chittacks; Katwa 10 seers 15 chittacks; Raniganj 10½ seers.
- B. At Rampur Hat the retail price of salt is 10½ seers per rupee.
- C. At Vishnupur the retail price of salt is 9½ seers per rupee.
- D. In the subdivisions the retail prices of salt per rupee are:—Contai 9 seers; Tamluk 10½ seers; Ghatal 11½ seers.
- E. In the subdivisions the retail prices of salt per rupee are:—Serampore 10½ seers; Jahanabad 10 seers 9 chittacks.
- F. At Ulubaria the retail price of salt is 10 seers 10½ chittacks per rupee.
- G. In the marts in the interior of the district the retail prices of salt per rupee are:—Chetla 10½ seers; Barasat 11½ seers; Baduria 10 seers 10 chittacks; Magrahat 10 seers 10½ chittacks.
- H. In the subdivisions the retail prices of salt per rupee are:—Kushtia (Bahadurkhal) 10½ seers (panga); Chuadanga 11 seers (panga); Meherpur 10 seers (karkatch); Ranaghat 10½ seers (crushed).
- I. In the subdivisions the retail prices of salt per rupee are:—Lalbagh 11 seers; Kandi 11 seers; Jangipur return not received.
- J. In the subdivisions the retail prices of salt per rupee are:—Jhenida 10 seers; Magura 9½ seers; Narail 10 seers; Bangaon 10 seers 10 chittacks.

BEERS OF 80 TOLAIS.

RAJRA OR CUMBU. (<i>Peromyscus typhoid-</i> <i>emus.</i>)						MARUA OR RAOI (<i>Eleusina Corocana.</i>)					
Present return.		Next preceding re- turn.		Corresponding re- turn of last year.		Present return.		Next preceding re- turn.		Corresponding re- turn of last year.	
S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.
100	000			100	000	100	000			100	000
101	000			101	000	101	000			101	000
102	000			102	000	102	000			102	000
103	000			103	000	103	000			103	000
104	000			104	000	104	000			104	000
105	000			105	000	105	000			105	000
106	000			106	000	106	000			106	000
107	000			107	000	107	000			107	000
108	000			108	000	108	000			108	000
109	000			109	000	109	000			109	000
110	000			110	000	110	000			110	000
111	000			111	000	111	000			111	000
112	000			112	000	112	000			112	000
113	000			113	000	113	000			113	000
114	000			114	000	114	000			114	000
115	000			115	000	115	000			115	000
116	000			116	000	116	000			116	000
117	000			117	000	117	000			117	000
118	000			118	000	118	000			118	000
119	000			119	000	119	000			119	000
120	000			120	000	120	000			120	000
121	000			121	000	121	000			121	000
122	000			122	000	122	000			122	000
123	000			123	000	123	000			123	000
124	000			124	000	124	000			124	000
125	000			125	000	125	000			125	000
126	000			126	000	126	000			126	000
127	000			127	000	127	000			127	000
128	000			128	000	128	000			128	000
129	000			129	000	129	000			129	000
130	000			130	000	130	000			130	000
131	000			131	000	131	000			131	000
132	000			132	000	132	000			132	000
133	000			133	000	133	000			133	000
134	000			134	000	134	000			134	000
135	000			135	000	135	000			135	000
136	000			136	000	136	000			136	000
137	000			137	000	137	000			137	000
138	000			138	000	138	000			138	000
139	000			139	000	139	000			139	000
140	000			140	000	140	000			140	000
141	000			141	000	141	000			141	000
142	000			142	000	142	000			142	000
143	000			143	000	143	000			143	000
144	000			144	000	144	000			144	000
145	000			145	000	145	000			145	000
146	000			146	000	146	000			146	000
147	000			147	000	147	000			147	000
148	000			148	000	148	000			148	000
149	000			149	000	149	000			149	000
150	000			150	000	150	000			150	000
151	000			151	000	151	000			151	000
152	000			152	000	152	000			152	000
153	000			153	000	153	000			153	000
154	000			154	000	154	000			154	000
155	000			155	000	155	000			155	000
156	000			156	000	156	000			156	000
157	000			157	000	157	000			157	000
158	000			158	000	158	000			158	000
159	000			159	000	159	000			159	000
160	000			160	000	160	000			160	000
161	000			161	000	161	000			161	000
162	000			162	000	162	000			162	000
163	000			163	000	163	000			163	000
164	000			164	000	164	000			164	000
165	000			165	000	165	000			165	000
166	000			166	000	166	000			166	000
167	000			167	000	167	000			167	000
168	000			168	000	168	000			168	000
169	000			169	000	169	000			169	000
170	000			170	000	170	000			170	000
171	000			171	000	171	000			171	000
172	000			172	000	172	000			172	000
173	000			173	000	173	000			173	000
174	000			174	000	174	000			174	000
175	000			175	000	175	000			175	000
176	000			176	000	176	000			176	000
177	000			177	000	177	000			177	000
178	000			178	000	178	000			178	000
179	000			179	000	179	000			179	000
180	000			180	000	180	000			180	000
181	000			181	000	181	000			181	000
182	000			182	000	182	000			182	000
183	000			183	000	183	000			183	000
184	000			184	000	184	000			184	000
185	000			185	000	185	000			185	000
186	000			186	000	186	000			186	000
187	000			187	000	187	000			187	000
188	000			188	000	188	000			188	000
189	000			189	000	189	000			189	000
190	000			190	000	190	000			190	000
191	000			191	000	191	000			191	000
192	000			192	000	192	000			192	000
193	000			193	000	193	000			193	000
194	000			194	000	194	000			194	000
195	000			195	000	195	000			195	000
196	000			196	000	196	000			196	000
197	000			197	000	197	000			197	000
198	000			198	000	198	000			198	000
199	000			199	000	199	000			199	000
200	000			200	000	200	000			200	000

KANGNI OR KAKUN, ITALIAN MILLET. (<i>Setaria Italica</i> .)						GRAM, CHANA, CHHOLA, KADALAY, OR SUNAGA. (<i>Pisum arvense</i> .)					
Present return.			Next preceding re- turn.			Present return.			Next preceding re- turn.		
Corresponding re- turn of last year.			Corresponding re- turn of last year.			Corresponding re- turn of last year.			Corresponding re- turn of last year.		
S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.
...	13	0	13	0	16	8
...	13	0	13	8	16	8
...	12	0	12	8	14	0
...	12	8	12	0	15	0
...	12	0	11	0	16	0
...	16	0	16	0	15	8
...	14	0	13	0	16	0
10	0	10	0	10	0	11	6	11	6	14	8
...	16	13	16	0	20	0
...	20	0	18	0	22	13
...	13	8	13	4	16	0
...	11	0	16	0	13	0
...	18	0	16	8	22	8
...	14	8	12	0	12	0
...	13	8	13	0	15	0
...	9	0	8	0	11	0
...	11	0	10	0	15	0
...	12	0	15	0	15	0
...	16	0	16	0	16	8
...	11	8	11	8	15	0
...	9	0	9	0	8	0
...	23	0	14	0	18	0
...	9	0	9	8	14	0

quarters Station Bazars of the Districts of Bengal on the 15th November 1899.

WHOLESALE PRICES PER MAUND OF 40 SEERS.												DISTRICTS.	Number.	
INDIAN-CORN OR MAIZE. (Zea mays.)			ARHAR OR TUR, CAJIAN PEA. (Cajanus indicus.)			SALT.			SALT.					
Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.	Present return.	Next preceding return.	Corresponding return of last year.			
S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	Rs. A. P.	Rs. A. P.	Rs. A. P.	BENGAL.		
...	10 0	10 0	...	A 11 8	11 8	11 8	Crushed.	8 13 4 0	3 4 0	3 4 0	Burdwan.	1
...	9 0	9 0	...	B 10 8	10 8	10 8	Karkatch.	8 13 10 6	3 10 6	3 10 6	Birbhum.	2
...	10 0	10 0	12 0	C 10 0	10 0	10 0	4 0 0	4 0 0	4 0 0	Bankura.	3	
...	8 0	9 0	...	D 11 0	11 4	11 0	3 8 0	3 8 0	3 8 0	Midnapore.	4	
...	8 0	8 0	7 0	E 10 0	10 8	10 0	3 12 0	3 12 0	3 12 0	Hooghly.	5	
...	11 4	11 8	11 4	F 10 9	10 8	10 2 1/2	3 8 0	3 8 0	3 8 0	Howrah.	6	
...	9 0	9 8	11 8	G 10 12	10 12	10 6 1/2	3 6 0	3 6 0	3 7 0	24-Parganna.	7	
13 4	11 6	20 0	9 0	9 0	12 4	H 11 0	11 0	10 0 1/2	3 5 0	3 5 0	3 6 0	Calcutta.	8	
...	10 10	10 10	...	I 11 7	12 1	11 7 1/2	3 8 0	3 8 0	3 8 0	Nadia.	9	
...	11 0	11 0	...	J 9 2	9 2	10 0 1/2	3 12 0	3 12 0	3 14 0	Murshidabad.	10	
...	10 0	10 0	11 0	K 10 0	10 0	10 0 1/2	3 12 0	3 12 0	3 12 0	Jessore.	11	
...	10 0	10 0	11 0	L 9 12	9 12	10 0 1/2	3 12 0	3 12 0	3 12 0	Khulna.	12	
...	17 4	17 4	24 0	M 10 0	10 0	10 0 1/2	3 10 0	3 10 0	3 11 0	Rajshahi.	13	
...	6 0	6 0	...	N 10 0	10 0	10 0 1/2	3 10 0	3 10 0	3 11 0	Dinajpur.	14	
...	9 0	9 0	12 0	O 9 0	9 0	9 0 1/2	3 10 0	3 10 0	3 11 0	Jalpaiguri.	15	
20 0	17 0	26 0	6 8	6 8	8 0	P 9 12	9 12	9 12 1/2	3 14 0	3 14 0	3 14 0	Darjeeling.	16	
18 0	18 0	18 0	8 0	8 0	9 0	Q 10 0	10 0	9 14 1/2	3 8 0	3 9 0	3 12 0	Rangpur.	17	
...	R 10 0	10 0	9 8 1/2	3 10 0	3 10 0	3 10 6	Bogra.	18	
...	9 0	9 12	12 8	S 10 0	10 0	10 0 1/2	3 10 0	3 10 0	3 10 6	Pabna.	19	
...	10 0	8 0	...	T 10 0	10 0	10 0 1/2	3 10 0	3 10 0	3 12 0	Dacca.	20	
...	8 0	8 0	10 0	...	...	...	...	...	...	Mymensingh.	21	
...	8 0	7 0	...	...	...	...	...	...	...	Faridpur.	22	
...	Backergunge.	23	

- K. In the subdivisions the retail prices of salt per rupee are :—Bagerhat 9 seers ; Sathkira 11½ seers.
 L. In the subdivisions the retail prices of salt per rupee are :—Nator 10½ seers ; Naugaon 9 seers 10 chittacks.
 M. In the Alipur Duars the retail price of salt is 8 seers per rupee.
 N. Retail prices of salt (panga) at Kurseong 8 seers and Siliguri 9 seers per rupee.
 O. In the subdivisions the retail prices of salt per rupee are :—Kurigram 8 seers ; Gaibanda 10 seers ; Nilphamari 10 seers.
 P. At Sirajganj the retail price of salt is 11½ seers per rupee.
 Q. In the marts in the interior of the district the retail prices of salt per rupee are :—Madanganj 11 seers 6 chittacks ; Manikganj 9 seers ; Mirkadam 11 seers 6 chittacks.
 R. In the subdivisions the retail prices of salt per rupee are :—Kishorganj 10 seers ; Jamalpur 10 seers ; Kagnari 3 seers ; Netrokona 9½ seers.
 S. In the subdivisions the retail prices of salt per rupee are :—Goalando 10 seers ; Madaripur 10½ seers.
 T. In the subdivisions the retail prices of salt per rupee are :—Pirojpur 8 seers ; Patuakhali 9 seers ; Bhola 9 seers.